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Report of the Second Conference of Parliamentarians of the Arctic Region

March 13–14, 1996
Yellowknife, Northwest Territories, Canada





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Report of the Second Conference of Parliamentarians of the Arctic Region

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Ottawa, Canada
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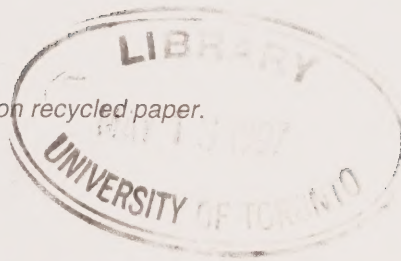
The Second Conference of Parliamentarians of the Arctic Regions was held in Yellowknife, Northwest Territories, Canada, March 13–14, 1996. This report contains the texts of the background papers, presentations, comments, and statements, which have been compiled from submitted papers and transcripts and have been edited for publication. Country statements are presented in the order in which they were given.

Copies of this publication have been made available to university, college, and public libraries through the Depository Services Program.

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Cover: Lone Peary caribou trotting across Wrotesley Valley, Bothia Peninsula, Northwest Territories, Canada. Light-coloured hills in the background are kame terraces left by glaciers at the end of the last ice age. Caribou are a vital part of the Arctic ecosystem. (Photo credit: Used by permission, Robert G. Hélie, Environment Canada.)

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Foreword

The Arctic forms a vast and diversified region, geographically, demographically, culturally, historically, and politically. Yet its various parts share many common pressures, problems, and opportunities. As a result, cooperation among the circumpolar countries is necessary for the mutual benefit of all Arctic states and peoples.

Parliamentarians of the Arctic Region have an important responsibility and role in the future direction of Arctic issues, not least of which is to promote and encourage within each of their home governments economically, socially, and environmentally responsible decision making.

In August of 1993, the Nordic Council held the First Conference of Parliamentarians of the Arctic Region in Reykjavík, Iceland. The First Conference stressed the need to focus on the issues that are important to all circumpolar countries, in parallel and in coordination rather than in isolation.

The Second Conference of Parliamentarians of the Arctic Region was held in Yellowknife, Northwest Territories, Canada, March 13–14, 1996. The conference enjoyed the privilege of holding its proceedings in the inspirational surroundings of the Northwest Territories Legislative Assembly Building.

The conference was attended by parliamentarians from seven of the eight Arctic nations. Only the Congress of the United States of America was not present at the two-day discussion. Other participants included the Sami Parliaments, the Nordic Council, the West Nordic Parliamentary Council, and international Arctic Indigenous peoples' organizations. The discussions were frank and productive. The valuable participation of the Indigenous peoples from around the circumpolar Arctic on each theme added relevance to the discussion and allowed a true reflection of the local needs and concerns.

The Second Conference focused on four themes of importance to the Arctic region:

- achieving sustainable development in the Arctic region
- environmental contaminants in the Arctic
- challenges for Arctic governance
- security issues

In the course of the discussions, the importance of recognizing the roles of Indigenous peoples in policy design and decision making was stressed. Beyond political fairness, Indigenous peoples bring a unique depth of knowledge and experience to discussions of sustainable development in their homeland. The Canadian comanagement model and process was highlighted as a means of heightening community participation in resource management and of facilitating increased institutional accountability within a settlement area. This model has enhanced the exchange of information about activities and decisions, and it fosters trust and cooperation between Indigenous and non-Indigenous populations. In reality, it is the Indigenous peoples of the Arctic who are most affected by decisions, therefore, Indigenous peoples should be full participants in decision-making processes and fora.

The need to utilize traditional ecological knowledge in decision making was also urged as it offers a wealth of practical information about Arctic realities. As Ms. Rosemarie Kuptana, President of the Inuit

Circumpolar Conference, stated,

Inuit views of sustainable development give equal value to environmental integrity and the use of the earth's resources to meet human needs, and strive to find a balance and harmony between these two objectives.

As we are all becoming aware, the Arctic environment and its peoples are extremely sensitive to activities both within the region and far from its borders. The parliamentarians were particularly struck by the number of speakers who raised the immediate and critical issue of toxic contaminants and their effect on the Arctic environment and its peoples. The immediate and urgent threat to the Arctic environment of radionuclide contamination from various sources, including nuclear tests, decommissioned nuclear submarines and icebreakers, and radioactive waste material, was stressed, and all governments were urged to cooperate and address this issue in haste.

Unanimous support from all delegations called for the immediate and rapid establishment of an Arctic Council. The Council is seen as the most effective way to harmonize the many diverse bilateral and multilateral activities and initiatives presently being undertaken relative to Arctic issues. The final declaration from Yellowknife was brought forward by Mr. John Finlay, MP, to the Ministerial Meeting of the Arctic Environmental Protection Strategy (AEPS) in Inuvik, Northwest Territories, on behalf of the Standing Committee of Parliamentarians of the Arctic Region.

The Standing Committee of Parliamentarians of the Arctic Region will continue its important work, namely, by following up with organizations, governments, and international bodies on the implementation of the recommendations from the conference. Included in the recommendations on the establishment of an Arctic Council is a clearly defined and official link and role for the Standing Committee of Parliamentarians of the Arctic Region within the structure of the proposed Arctic Council. Recommendations also addressed future arrangements for interparliamentary cooperation among Arctic countries and assistance to the next host country, Russia, in preparing for the Third Conference of Parliamentarians of the Arctic Region, to be held in Salekhard, Russia, no later than 1998.

We may wish to examine the commitments and statements made in 1993 and 1996 and ask ourselves: Is the progress we have made in the last three years taking the right direction, and is it enough? In answering these questions, we will know the direction and objectives towards which we should strive over the next two years.

My fellow parliamentarians, may I take this opportunity to express my warmest thanks to the members of the Standing Committee, to all parliamentarians, presenters, and observers who contributed to the work of the conference, and, finally, to the remarkable staff and volunteers who made it all possible and successful.

Clifford Lincoln, Conference Chairperson
Member of Parliament
for Lachine-Lac St. Louis, Canada

Second Conference of Parliamentarians of the Arctic Region Conference Statement

We, elected representatives of the Canadian, Danish and Greenlandic, Finnish, Icelandic, Norwegian, Russian and Swedish Parliaments, of the Sami Parliaments, the Nordic Council, the West Nordic Parliamentary Council and of the International Arctic Indigenous Peoples' Organizations, meeting in Yellowknife, Northwest Territories, Canada, on 13–14 March 1996,

Recalling

- the statement of conclusion (Final Document) from the International Parliamentary Conference of the Arctic, held in Reykjavík in August 1993; and

Noting

- that the Arctic region is important not only to residents of the Arctic areas and to the social, economic and spiritual well-being and political development of all northern countries, but also to international relations throughout the world, and to the regional and global environment;
- the need to achieve sustainable or long-term economic and cultural vigour in all Arctic areas, based to the optimum extent on local or regional resources, conditions, skills, and values; and taking into account the special and diverse interests and contributions of Arctic indigenous peoples;
- the need to ensure that resources of the Arctic regions are used and conserved in such a way that they provide optimum benefit both to the residents of the Arctic and northern regions in which they are found and to the countries in which they occur;
- the sensitivities and vulnerabilities of Arctic and northern terrestrial and marine ecosystems to chemical contaminants from both near and distant sources; the threats presented by such contaminants to the health of present and future generations, and the extreme difficulty, imposed by Arctic environmental conditions and biological processes, of removing such contamination or counteracting its effects once it has become dispersed in Arctic regions;
- that these sensitivities and vulnerabilities, and the challenges and opportunities presented by Arctic resources of many kinds, emphasize the continued need for protection of the environment and preservation of biological diversity in the Arctic region, and for respect for the principles of sustainable and responsible development in the utilization of its natural resources;

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Noting also

- the need for enhancing through legislative activities parliamentary influence on the overall development and protection of the Arctic region, and the need for active dialogues between governments and parliaments on Arctic issues;

Recognizing

- that notwithstanding the wide diversity and variety of geographical, demographic, cultural, historical, and political characteristics of different Arctic and northern areas, there are common or shared problems, and opportunities for regional and circumpolar action that can be of mutual benefit to all Arctic states and peoples;
- the responsibilities incumbent upon the elected representatives of Arctic regions to protect the Arctic region and its peoples against environmental threats, unwise or wasteful use of its resources, and destruction of its cultures;
- the essential contribution that the accumulated knowledge of indigenous peoples can make in addressing the present and future problems of the Arctic regions and in implementing solutions;
- the need for improved scientific knowledge and development of appropriate technologies to address satisfactorily the increasingly serious environmental, resource-use, economic, and potential health problems of the Arctic regions;
- the report and recommendations on a programme of co-operation in the Arctic Region, adopted by the Nordic Council of Ministers, February 1996, which emphasizes the need for closer co-operation and coordination in Arctic activities and policies to avoid duplication of effort or inconsistencies and to achieve an optimum balance between regional, national, and circumpolar efforts and policies concerned with the Arctic;
- that the process of establishing an Arctic Council as an intergovernmental institutional framework to promote co-operation for environmental protection and sustainable development of the Arctic region appears to be coming to a conclusion;

Recognizing also

- that the expression of co-ordinated concerns and discussions from parliamentarians in many northern countries will facilitate the work of addressing the complex and shared issues of the Arctic region;

Determined to

- seize this moment in the political and environmental history of the world, when all Arctic nations in concert and the circumpolar peoples in particular, have an opportunity to turn the course of regional and international events from patterns of exclusiveness and confrontation toward a vision of circumpolar co-operation, collective environmental and social security, and shared responsibility for our common high-latitude home;

- protect and defend the Arctic against environmental threats arising from outside the region and from unsustainable activities within the Arctic;
- work toward establishment of collective or shared international responsibilities and mechanisms involving all the Arctic nations, to ensure environmental and political security for the whole of the Arctic region, acknowledging the responsibility of each northern country and the international community to relieve the Arctic region of environmental threats, including radioactive and other hazardous wastes which have been dumped or discharged on land or at sea, or which may be carried to Arctic regions by atmospheric and ocean currents;

Therefore recommend

- the establishment of an Arctic Council that will enhance international co-ordination and co-operation on issues of Arctic policy, environmental protection, sustainable economic development, and cultural diversity;
- support for the development and implementation in the Arctic regions, where appropriate, of international and national activities arising out of Agenda 21 of the UNCED, in particular Chapter 26 regarding indigenous peoples, the Convention on Biological Diversity, and Principle 21 of the Rio Declaration;
- the careful development of national economic and health policies of all northern countries that will recognize the special needs and conditions of Arctic regions;
- the promotion of co-operation between intergovernmental bodies and non-Arctic states that have an interest in, or whose policies may have an effect upon, Arctic regions, such as the European Union and the Nordic Council of Ministers;
- the adoption of national policies and international arrangements that broaden Arctic security issues from a predominantly military focus to the development of collective environmental security that includes the values, life styles, and cultural identity of indigenous northern societies;
- the continuation and widening of the practice of including representatives of Arctic peoples in national delegations in international negotiations and decisions which affect Arctic communities, resources, and ecosystems;
- the sustainable and rational utilization of the living resources of the sea, including marine mammals;
- intensified intergovernmental co-operation in the development of communications, transportation systems, and commerce throughout the Arctic region, consistent with environmental protection and cultural identities;

And ask our respective governments to

- establish the intergovernmental Arctic Council as soon as possible, and ensure that national authorities work toward the implementation of the recommendations and activities of the Council;

Conference Statement

- include the Standing Committee of Parliamentarians of the Arctic Region as a component of the structure for international co-operation within the Arctic Council, and to express the desirability of a close dialogue between the Arctic Council and the Standing Committee;
- under the aegis of the proposed Arctic Council, continue vigorously to implement, with adequate resources and policy support, the Arctic Environmental Protection Strategy and its sub-programmes;
- work assiduously toward the achievement of international agreements and operational protocols for the reduction of greenhouse gases and the control of the release of toxic materials, stressing their particular effect on the long-term environment of the Arctic regions and the well-being of its peoples;
- set in place practices whereby all policies at all levels, including all international agreements to which the state is a party, are examined for their potential effect on Arctic regions and Arctic peoples, with provisions made if necessary to ensure that their implementation is appropriate to Arctic conditions;
- support increased national and international scientific research and environmental monitoring of sub-Arctic and Arctic areas, including where relevant the research priorities identified by the International Conference for Arctic Research Planning organized by the International Arctic Science Committee, the activities of the UNESCO Northern Sciences Network, and other internationally co-ordinated national scientific activities related to polar regions;
- ensure that at an early stage, formal environmental assessment, with adequate input from resident indigenous peoples, is included in all plans and decisions that could have impact on Arctic landscapes or waters;
- in collaboration with indigenous people from different parts of the Arctic, develop co-ordinated and co-operative programmes and activities to give expression to the cultures and histories, recognize the rights, spiritual and human values and teachings, and improve the social and economic circumstances of indigenous peoples throughout the region, recognizing the particular role and contribution of women;
- set in place and strengthen policies and programmes to encourage and facilitate the active participation or leadership by indigenous Arctic peoples in scientific activities in Arctic regions, especially on those subjects that are identified by northern residents themselves to be important to their social and economic prosperity and their culture;
- join with other countries in establishing and supporting a scientifically valid, operationally practical means of preventing and controlling deleterious effects on the Arctic marine and coastal environment from waste radioactive substances presently deposited in Arctic areas or watersheds;

- maintain and improve the circumpolar network of environmental observation and monitoring systems, including especially meteorological and upper atmosphere observations, monitoring of chemicals of concern, and radioactivity;
- support efforts to create a ban on nuclear weapons tests and to put all other civilian and military use of nuclear technology and nuclear material, including management of radioactive wastes, under international surveillance and control;
- develop and implement opportunities for Arctic-related measures of international confidence-building, arms control, and disarmament;
- prepare an inventory of Arctic-related work undertaken in the subjects identified in this Statement, including studies of indigenous cultures, languages and histories, and present results to the next Parliamentary Conference;

Furthermore

- the Conference gratefully accepts the kind invitation of Russia to host in Salekhard, no later than 1998, the next Conference of Parliamentarians;
- the Conference asks the Standing Committee of Parliamentarians of the Arctic Region to continue its work, in which the major tasks will be: (1) to follow up the implementation of the recommendations and requests from this conference to governments and international bodies; (2) to follow closely the establishment of the Arctic Council, and ensure the future role and recognition of parliamentarians in facilitating the work of the Council; (3) to study alternatives for future arrangements for inter-parliamentary co-operation between the Arctic countries and to report to the next Conference of Parliamentarians; and (4) to prepare, in co-operation with the host country, the next Conference of Arctic Parliamentarians;
- the Conference asks the Nordic Council to take continued responsibility for the Committee's secretariat, in co-operation with the host country for the next conference.

Yellowknife, Canada, 14 March 1996

Déclaration de la Deuxième Conférence des parlementaires de la région arctique

Nous, représentants élus des parlements canadien, danois et groenlandais, finlandais, islandais, norvégien, russe et suédois, des parlements samis, du Conseil nordique, du Conseil parlementaire de l'Ouest nordique (West Nordic Parliamentary Council) et des organisations internationales des peuples autochtones de l'Arctique, réunis à Yellowknife (Territoires du Nord-Ouest), au Canada, du 13 au 14 mars 1996;

Rappelant

- l'énoncé des conclusions (document final) de la Conférence internationale des parlementaires de l'Arctique, tenue à Reykjavík en août 1993;

Notant

- l'importance de la région arctique non seulement pour ses habitants ainsi que pour le bien-être social, économique et spirituel et pour le développement politique de tous les pays nordiques, mais également pour les relations internationales dans le monde entier et pour l'environnement régional et planétaire;
- le besoin de parvenir au dynamisme économique et culturel durable ou à long terme dans toutes les zones arctiques, en se fondant au mieux sur les ressources, conditions, aptitudes et valeurs locales et régionales et en tenant compte des intérêts et des apports spéciaux et divers des Autochtones de l'Arctique;
- le besoin de veiller à ce que les ressources de l'Arctique soient utilisées et conservées à l'avantage optimal des habitants de l'Arctique et du Nord et des pays où elles se trouvent;
- la sensibilité et la fragilité des écosystèmes terrestres et marins de l'Arctique et du Nord aux polluants chimiques de sources proches et distantes; les menaces que présentent ces polluants pour la santé des générations actuelles et futures et l'extrême difficulté, imposée par les conditions environnementales et les processus biologiques dans l'Arctique, de dépolluer ou de contrer les effets des polluants une fois dispersés dans la région;
- que cette sensibilité et cette fragilité, et les défis et possibilités présentés par des ressources arctiques variées, font ressortir le besoin persistant de protéger l'environnement et de préserver la diversité biologique de la région, ainsi que de respecter les principes du développement durable et responsable dans l'utilisation des ressources naturelles qui s'y trouvent;

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Notant également

- la nécessité de renforcer au moyen d'activités législatives l'influence des parlementaires sur le développement global et sur la protection de la région arctique, et le besoin que les gouvernements et les parlements dialoguent activement sur les questions arctiques;

Reconnaissant

- que, malgré la grande diversité et variété des caractéristiques géographiques, démographiques, culturelles, historiques et politiques de diverses zones arctiques et nordiques, il y a des problèmes communs ou partagés et des possibilités d'action régionale et circumpolaire qui peuvent profiter à l'ensemble des États et des populations arctiques;
- les responsabilités qui incombent aux représentants élus de l'Arctique de protéger la région et ses habitants contre les menaces à l'environnement, l'utilisation imprudente ou le gaspillage de ses ressources et la destruction de ses cultures;
- l'apport essentiel que les connaissances accumulées par les populations autochtones peuvent fournir pour régler les problèmes actuels et futurs de la région et pour mettre en oeuvre les solutions;
- le besoin d'améliorer les connaissances scientifiques et de développer les technologies voulues pour bien s'attaquer aux problèmes de plus en plus graves que connaît la région arctique en matière d'environnement, d'utilisation des ressources et d'économie et de ceux qu'elle peut connaître en matière de santé;
- le rapport et les recommandations d'un programme de coopération dans la région arctique, adoptés par le Conseil nordique des ministres, en février 1996, qui souligne le besoin d'une coopération et d'une collaboration plus étroites au chapitre des activités et des politiques de l'Arctique pour éviter la multiplication inutile des efforts ou les contradictions et pour réaliser l'équilibre optimal parmi les politiques et efforts régionaux, nationaux et circumpolaires concernant la région;
- que semble arriver à sa conclusion le processus visant l'établissement d'un conseil de l'Arctique comme cadre institutionnel intergouvernemental pour favoriser la coopération en faveur de la protection de l'environnement et du développement durable de la région arctique;

Reconnaissant également

- que l'expression de préoccupations d'ensemble et que les discussions des parlementaires de nombreux pays nordiques faciliteront la tâche de s'attaquer aux enjeux complexes et partagés de la région arctique;

Déterminés

- à profiter de ce moment dans l'histoire politique et environnementale du monde, quand toutes les nations arctiques de concert et les populations circumpolaires en particulier ont l'occasion d'agir sur la tournure des événements régionaux et

internationaux afin que l'exclusivisme et la confrontation fassent place à une vision de coopération circumpolaire, de sécurité collective de l'environnement et de la société et de responsabilité partagée à l'égard de notre patrie des hautes latitudes;

- à protéger et à défendre l'Arctique contre les menaces environnementales provenant de l'extérieur de la région et des activités non durables dans la région;
- à travailler à établir des responsabilités internationales, qui soient collectives ou partagées, et des mécanismes impliquant tous les pays de l'Arctique pour assurer la sécurité environnementale et politique de toute la région arctique, en reconnaissant la responsabilité qui incombe à chaque pays nordique et à la communauté internationale de débarrasser la région des menaces environnementales, y compris des déchets radioactifs et autres déchets dangereux qui ont été déchargés sur terre ou rejetés en mer ou qui peuvent être transportés dans la région par les courants atmosphériques et océaniques;

Recommandons par conséquent

- l'établissement d'un conseil de l'Arctique qui renforcera la coordination et la coopération internationales sur des questions de politiques, de protection de l'environnement, de développement économique durable et de diversité culturelle dans l'Arctique;
- l'appui au développement et à la mise en oeuvre dans la région arctique, s'il y a lieu, d'activités internationales et nationales émanant d'Action 21 de la CNUED, en particulier au chapitre 26 concernant les Autochtones qui est issu de la Convention sur la diversité biologique et du principe 21 de la Déclaration de Rio;
- l'élaboration soignée de politiques économiques et sanitaires nationales à l'intention de tous les pays nordiques qui reconnaîtront les conditions et les besoins particuliers de la région arctique;
- la promotion de la coopération entre les organismes intergouvernementaux et les États autres que ceux de l'Arctique qui s'intéressent à la région arctique, ou dont les politiques peuvent avoir un impact sur elle, tels que l'Union européenne ou le Conseil nordique des ministres;
- l'adoption de politiques nationales et la conclusion d'ententes internationales qui élargissent les questions de sécurité de l'Arctique, au-delà de considérations principalement militaires, pour englober la mise en place d'un régime collectif de sécurité de l'environnement qui tient compte des valeurs, des modes de vie et de l'identité culturelle des sociétés autochtones du Nord;
- la continuation et l'élargissement de la pratique consistant à faire participer les représentants des peuples de l'Arctique aux délégations nationales qui prennent part aux négociations et décisions internationales touchant les collectivités, les ressources et les écosystèmes de la région;

Conference Statement

- l'utilisation durable et rationnelle des ressources biologiques de la mer, y compris les mammifères;
- l'intensification de la coopération intergouvernementale au développement des communications, des systèmes de transport et du commerce pour toute la région arctique, dans le respect de l'environnement et de l'identité culturelle;

Et demandons à nos gouvernements respectifs

- d'établir, le plus tôt possible un organisme intergouvernemental, soit le Conseil de l'Arctique, et de veiller à ce que les autorités nationales favorisent la mise en oeuvre des recommandations et des activités du Conseil;
- d'intégrer le Comité permanent des parlementaires de la région arctique dans la structure de coopération internationale au sein du Conseil de l'Arctique et d'exprimer le fait qu'il est souhaitable d'entretenir un dialogue étroit avec le Comité permanent;
- de poursuivre vigoureusement, sous l'égide du Conseil de l'Arctique proposé, l'application de la Stratégie pour la protection de l'environnement arctique et de ses sous-programmes, avec les ressources et l'appui stratégique appropriés;
- de travailler assidûment à l'application des ententes internationales et des protocoles opérationnels visant la réduction des gaz à effet de serre et le contrôle du rejet de matières toxiques en faisant particulièrement valoir leur effet à long terme sur l'environnement et sur le bien-être des populations dans la région arctique;
- de mettre en place des pratiques au moyen desquelles l'ensemble des politiques, à tous les niveaux, y compris toutes les ententes internationales passées par l'État, sont examinées du point de vue de leur effet potentiel sur la région et les populations arctiques et d'inclure, le cas échéant, des dispositions garantissant que leur mise en application soit adaptée aux conditions de l'Arctique;
- d'appuyer l'accroissement des activités nationales et internationales de recherche scientifique et de surveillance environnementale concernant les zones subarctiques et arctiques, y compris, s'il y a lieu : les priorités de recherche définies par les participants à la conférence internationale pour la planification de la recherche dans l'Arctique organisée par l'International Arctic Science Committee, les activités du Réseau scientifique pour le Nord de l'UNESCO et d'autres activités scientifiques d'envergure nationale relatives aux régions polaires et coordonnées à l'échelle internationale;
- de veiller à ce que, dès les étapes initiales, une évaluation environnementale officielle, ayant bénéficié de l'apport adéquat des Autochtones qui vivent dans la région, soit incluse dans tous les plans et toutes les décisions susceptibles d'avoir une incidence sur les paysages ou les eaux de l'Arctique;

- d'élaborer, avec la collaboration des populations autochtones de différentes parties de l'Arctique, des activités et des programmes concertés et coopératifs qui font une place à la culture et à l'histoire, qui tiennent compte des droits, des valeurs et des enseignements spirituels et humains et qui permettent d'améliorer la situation économique et sociale des populations autochtones de toute la région, tout en reconnaissant le rôle et l'apport particuliers des femmes;
- de mettre en place et de renforcer des politiques et des programmes visant à encourager et à faciliter la participation active ou le leadership des populations autochtones de l'Arctique relativement à des activités scientifiques, en particulier pour les sujets que les habitants du Nord ont eux-mêmes identifiés comme étant importants pour leur prospérité économique et sociale et leur culture;
- de collaborer avec d'autres pays à la mise au point et à l'appui d'un moyen scientifiquement valable et réalisable pour prévenir et contrôler les effets nocifs, sur les zones marines et littorales arctiques, des déchets radioactifs présents dans les territoires ou les bassins hydrographiques de la région;
- de maintenir et d'améliorer le réseau circumpolaire de systèmes d'observation et de surveillance environnementales, surtout en ce qui concerne les observations météorologiques et celles de la haute atmosphère, la surveillance des substances chimiques préoccupantes et la radioactivité;
- d'appuyer les efforts pour interdire les essais d'armes nucléaires et pour soumettre à la surveillance et au contrôle internationaux tous les autres usages civils et militaires de la technologie et du matériel nucléaires, y compris la gestion des déchets radioactifs;
- de concevoir et de concrétiser des possibilités de mesures liées à l'Arctique et visant l'instauration de la confiance, le contrôle des armements et le désarmement à l'échelle internationale;
- de dresser un inventaire des travaux relatifs à l'Arctique dans les domaines identifiés dans cette déclaration, y compris les études sur les cultures, les langues et l'histoire autochtones, et d'en présenter les résultats à la prochaine conférence des parlementaires.

En outre,

- nous acceptons avec gratitude l'aimable invitation de la Russie à organiser à Salekhard, d'ici 1998, la prochaine conférence des parlementaires;
- nous demandons au Comité permanent des parlementaires de la région arctique de poursuivre ses travaux, qui consisteront principalement : 1) à suivre la mise en oeuvre des recommandations et des requêtes faites dans le cadre de cette conférence aux gouvernements et aux organismes internationaux; 2) à suivre de près la création du Conseil de l'Arctique et à s'assurer que les parlementaires jouent un rôle et sont

Conference Statement

reconnus comme des personnes clés qui contribuent à faciliter la tâche du Conseil; 3) à étudier des solutions de rechange pour les arrangements futurs en ce qui concerne la coopération entre les parlements des pays de l'Arctique et à présenter un rapport à la prochaine conférence des parlementaires; 4) à organiser, en collaboration avec le pays hôte, la prochaine conférence des parlementaires de la région arctique;

- nous demandons au Conseil nordique de se charger en permanence du secrétariat du Comité en collaboration avec le pays hôte de la prochaine conférence.

Yellowknife, Canada, le 14 mars 1996

Вторая конференция парламентариев Арктического региона

Заявление участников конференции

Мы, избранные представители парламентов Дании и Гренландии, Исландии, Канады, Норвегии, России, Финляндии и Швеции, парламентов саами, Совета северных стран, Северо-западного парламентского совета и международных организаций коренных народов Арктики, собравшиеся в городе Йеллонайфе, Северо-Западные территории, Канада, 12-14 марта 1996 года,

Учитывая

- заключительное заявление (Заключительный документ) Международной парламентской конференции по Арктике, состоявшейся в Рейкьявике в августе 1993 года; и

Отмечая

- тот факт, что Арктический регион имеет важное значение не только для жителей различных районов Арктики и для социального, экономического и духовного благосостояния и политического развития всех северных стран, но и для международных отношений во всем мире, а также для региональной и глобальной окружающей среды;
- необходимость обеспечить устойчивую и долгосрочную экономическую и культурную активность во всех районах Арктики на основе оптимального использования местных или региональных ресурсов, условий, талантов и ценностей, с учетом особых и разнообразных интересов и форм участия коренных народов Арктики;
- важность того, чтобы ресурсы Арктики использовались и сохранялись таким образом, чтобы они приносили оптимальную выгоду как жителям Арктики и северных районов, в которых они эксплуатируются, так и странам, в которых они находятся;
- уязвимость и незащищенность Арктики и северных наземных и морских экосистем от химических загрязняющих веществ из ближних и дальних источников; угрозу, которую такие загрязняющие вещества представляют для здоровья нынешних и будущих поколений, и те колоссальные трудности, с которыми, ввиду особых условий окружающей среды Арктики и протекающих в них биологических процессов, связаны любые попытки удалить такие вещества или ослабить их воздействие после того, как они распространились в арктических районах;
- тот факт, что эта уязвимость и незащищенность, а также проблемы и возможности, связанные с многочисленными ресурсами Арктики,

подчеркивают постоянную необходимость защищать окружающую среду и сохранять биологическое разнообразие Арктического региона, а также соблюдать принципы устойчивого и ответственного развития в процессе эксплуатации природных ресурсов;

Отмечая также

- необходимость того, чтобы парламенты, путем законодательной деятельности, повысили свое влияние на общее развитие и защиту Арктического региона, а также необходимость активного диалога между правительствами и парламентами по проблемам Арктики;

Признавая

- тот факт, что, несмотря на значительное своеобразие и разнообразие географических, демографических, культурных, исторических и политических особенностей различных арктических и северных районов, у всех у них есть общие проблемы и в каждом из них имеются возможности для региональных или циркумполярных действий, которые могут быть полезны всем арктическим государствам и народам;
- лежащую на избранных представителях арктических районов обязанность защищать Арктический регион и его народы от экологических опасностей, нерационального или неэкономного использования его ресурсов и разрушения его культуры;
- исключительно важный вклад, который накопленные коренными народами знания могут внести в дело нахождения и осуществления решений нынешних и будущих проблем арктических районов;
- необходимость углублять научные знания и разрабатывать технологии для удовлетворительного решения все более серьезных проблем Арктического региона, связанных с охраной окружающей среды, использованием ресурсов, экономикой и возможными опасностями для здоровья человека;
- доклад и рекомендации по программе сотрудничества в Арктическом регионе, принятые Советом министров северных стран в феврале 1996 года, в которых подчеркивается необходимость более тесного сотрудничества и координации мероприятий и программ в Арктическом регионе с целью недопущения дублирования и непоследовательности в работе и достижения оптимального согласования связанных с Арктикой региональных, национальных и циркумполярных усилий и программ;
- тот факт, что процесс создания Арктического совета в качестве межправительственного учреждения для содействия сотрудничеству

в области охраны окружающей среды и устойчивого развития Арктического региона приближается к завершению;

Признавая также,

- что совместное обсуждение актуальных вопросов и беседы парламентариев многих северных стран облегчат работу по решению сложных общих проблем Арктического региона;

Преисполненные решимости

- использовать настоящий момент в политической и экологической истории мира, когда у всех стран Арктического региона в целом, и у циркумполярных народов в особенности, появилась возможность изменить ход региональных и международных событий и перейти от политики изоляции и конфронтации к циркумполярному сотрудничеству, коллективной экологической и социальной безопасности и разделению ответственности за наш общий высокоширотный дом;
- охранять и защищать Арктику от экологических угроз, возникающих за пределами региона, а также от деятельности, ведущей к неустойчивости, в самой Арктике;
- стремиться к установлению коллективных или общих международных обязанностей и механизмов с участием всех арктических стран с целью обеспечения экологической и политической безопасности всего Арктического региона, признавая при этом ответственность каждой северной страны и международного сообщества за защиту Арктического региона от экологических угроз, включая угрозы, создаваемые сбросом на земле или в море радиоактивных и других отходов или их переносом в арктические районы атмосферными потоками или океанскими течениями;

Рекомендуем поэтому

- учредить Арктический совет, который будет способствовать расширению международной координации и сотрудничества по вопросам арктической политики, охраны окружающей среды, устойчивого экономического развития и культурного разнообразия;
- поддержать подготовку и осуществление в арктических районах, где это требуется, международных и национальных мероприятий, предусмотренных Программой 21 Конференции ООН по окружающей среде и развитию, и особенно главой 26, посвященной коренным народам, Конвенцией по биологическому разнообразию и Принципом 21 Декларации Конференции в Рио-де-Жанейро;

- всем северным странам тщательно разработать национальную политику в области экономики и охраны здоровья с учетом особых потребностей и условий арктических районов;
- содействовать сотрудничеству между межправительственными организациями и неарктическими государствами, чьи интересы распространяются или чья политика оказывает влияние на районы Арктики, — такими, как Европейский союз или Совет министров северных стран;
- принять национальные политические программы и заключить международные договоренности, которые позволили бы перенести упор в области безопасности в Арктике с преимущественно военной деятельности на разработку мер коллективной экологической безопасности, учитывающих ценности, образ жизни и культурные особенности коренных северных обществ;
- продолжать и расширять практику включения представителей народов Арктики в состав национальных делегаций для участия в международных переговорах и в процессах принятия решений, затрагивающих северные населенные пункты, ресурсы и экосистемы;
- пользоваться устойчивыми и рациональными методами при эксплуатации живых ресурсов моря, включая морских млекопитающих;
- расширять межправительственное сотрудничество в процессе развития связи, транспортных систем и торговли в Арктическом регионе с учетом необходимости охраны окружающей среды и сохранения культурной самобытности народов Арктики;

И просим правительства наших стран

- учредить как можно скорее межправительственный Арктический совет и дать указание национальным властям принимать меры для осуществления его рекомендаций и мероприятий;
- включить Постоянный комитет парламентариев Арктического региона в качестве элемента структуры международного сотрудничества в состав Арктического совета и подчеркнуть желательность активного диалога между Арктическим советом и Постоянным комитетом;
- под эгидой Арктического совета, при достаточном обеспечении ресурсами и политической поддержкой, продолжать энергичные усилия по осуществлению Стратегии защиты арктической среды и ее подпрограмм;

- настойчиво стремиться к заключению международных соглашений и рабочих протоколов, имеющих целью снижение уровня парниковых газов и сокращение выброса токсичных материалов, подчеркивая их особо губительное долгосрочное воздействие на окружающую среду Арктического региона и на условия жизни его народов;
- установить практику, в силу которой все программы и действия на всех уровнях, включая все международные соглашения с участием государства, должны изучаться с целью определения их потенциального воздействия на арктические районы и народы Арктики и, в случае необходимости, принятия требований, гарантирующих, что их осуществление не нанесет вреда окружающей среде Арктики;
- поддерживать интенсивные национальные и международные научные исследования и экологический мониторинг в приарктических и арктических районах, включая, где это оправдано, исследования по первоочередным направлениям, определенным участниками Международной конференции по планированию научных исследований в Арктике, созданной Международным комитетом по научным исследованиям в Арктике, а также работу Северной научной сети ЮНЕСКО и иные скоординированные с другими странами национальные научные исследования, связанные с полярными районами;
- принять меры к тому, чтобы все планы и решения, способные повлиять на ландшафт и воды Арктики, предусматривали осуществление на раннем этапе официальной экологической оценки при достаточном участии местных коренных народов;
- в сотрудничестве с коренными народами из различных районов Арктики разработать согласованные совместные программы и мероприятия, имеющие целью отразить культуру и историю коренных народов всего региона, признать их права, духовные и человеческие ценности и учения, улучшить их социальное и экономическое положение, а также признать особую роль и вклад женщин;
- принять и постоянно укреплять направления политики и программы, рассчитанные на то, чтобы поощрять и облегчать активное участие или ведущее положение представителей коренных народов Арктики в научных исследованиях в арктических районах, особенно в тех областях, которые, по определению самих жителей Севера, имеют большое значение для их социально-экономического процветания и культуры;
- совместно с другими странами создать и поддерживать научно обоснованную и практически действенную систему средств для

предотвращения и смягчения пагубного воздействия на морскую и прибрежную арктическую среду радиоактивных отходов, сбрасываемых в настоящее время в арктических районах или водосборных бассейнах;

- обслуживать и улучшать циркумполярную сеть экологических наблюдательных и мониторинговых систем, включая, в первую очередь, средства наблюдения за погодой и верхними слоями атмосферы, а также наблюдения за опасными химическими веществами и радиоактивностью;
- поддерживать усилия по введению запрета на испытания ядерного оружия и установлению международного наблюдения и контроля над всеми другими способами гражданского и военного использования ядерной технологии и ядерных материалов;
- создавать и использовать возможности осуществления связанных с Арктикой мер укрепления международного доверия, контроля над вооружениями и разоружения;
- подготовить перечень связанных с Арктикой работ, выполняемых в названных в настоящем Заявлении областях, включая исследования культуры, языков и истории коренных народов, и представить результаты участникам следующей конференции парламентариев;

Кроме того,

- участники Конференции принимают с благодарностью любезное предложение России провести следующую конференцию парламентариев в Салехарде не позднее 1998 года;
- участники Конференцию просят Постоянный комитет парламентариев Арктического региона продолжить свою работу, имея в виду следующие основные задачи: (1) проследить за выполнением рекомендаций и просьб участников настоящей Конференции в адрес правительств и международных организаций; (2) внимательно проследить за усилиями по созданию Арктического совета и обеспечить будущую роль и признание парламентариев в содействии работе Совета; (3) изучить различные возможности будущих соглашений в области межпарламентского сотрудничества между арктическими странами и доложить о них участникам следующей конференции парламентариев; и (4) подготовить в сотрудничестве с принимающей страной следующую конференцию арктических парламентариев;

участники Конференции просят Совет северных стран продолжать руководить работой секретариата Комитета в сотрудничестве со страной, принимающей следующую конференцию парламентариев.

Йеллонайф, Канада, 14 марта 1996 г.

Theme I: Achieving Sustainable Development in the Arctic Region

Background Paper

Toward Sustainable Development in the Circumpolar North

Terry Fenge
Executive Director
Canadian Arctic Resources Committee

BACKGROUND

The standard approach to a background document for a meeting of Arctic parliamentarians might have been to survey the sustainable development policies and programs of the eight Arctic states. But because survey articles on economic, environmental, security, and other Arctic issues have already been written (Hoel 1993; Dahl 1993), this paper takes a different approach.

First, this paper examines the paradigm of sustainable development in some detail, for it is open to various interpretations. Second, it suggests that, in the Arctic, Aboriginal self-determination and sustainable development are linked concepts. It further suggests that a key test of sustainability as a principle to guide public and private decision making lies in what it means for and delivers to Aboriginal peoples, and it notes the agenda of the Arctic Environmental Protection Strategy (AEPS) task force on sustainability with this in mind. Third, it considers traditional ecological knowledge (TEK) as a key contribution to planning for sustainability and presents a short case study of ecological change in the Hudson Bay region in northern Canada to illustrate

the potential use of TEK in implementing sustainability policies and programs. Finally, it proposes that the long-planned Arctic Council should reinforce the impressive work on sustainability being conducted under the AEPS.

1.0 INTRODUCTION

The concept of sustainable development received international prominence through the World Conservation Strategy, published in 1980, and the Report of the World Commission on Environment and Development (the Brundtland Commission), published in 1987 (WCED 1987). It was a guiding principle at the 1992 Earth Summit in Rio de Janeiro, and it underpins the documents and agreements that emanated from the summit, including the Rio Declaration on Environment and Development, the Biodiversity Convention, the Climate Change Convention, and Agenda 21.

Local, regional, and national jurisdictions around the world have taken this concept to heart and are seeking to implement policies and plans and to take action to promote sustainable development. Indeed, many did so before this concept was endorsed at Rio. Governments of the right and left and many transnational corporations share sustainability as a long-term aim.

In the circumpolar Arctic, sustainable development is a policy objective shared by the eight Arctic states. Different means are used to achieve the objective: for example, a National Commission in Finland, the President's Council in the United States, and the Green Plan in Canada. Bilateral and multilateral arrangements between Arctic states to deal with transboundary environmental issues and migratory species of wildlife have in recent years been

supplemented by circumpolar approaches to these issues (Young 1992, 1996).

In 1991, the eight Arctic states signed the Rovaniemi Declaration (appendix A) and committed themselves to the AEPS. In 1993, the Nuuk Declaration (appendix B) broadened this strategy to address sustainability more directly as an overarching goal. The Northern Forum, which links together a number of subnational Arctic governments, promoted this broadening of the AEPS. Simultaneously it defined telecommunications, surface and air transport, and energy and mineral development as research and policy themes to promote sustainability. Further circumpolar initiatives are planned. While still under negotiation, the soon-to-be-established Arctic Council is also scheduled to address sustainability as a priority research and policy issue.

2.0 SUSTAINABLE DEVELOPMENT: UNWRAPPING THE CONCEPT

The Brundtland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This deceptively simple definition hints at five underlying "core" principles:

1. respect for ecological integrity;
2. efficient use of natural, manufactured, and social capital;
3. promotion of equity;
4. participation of stakeholders; and
5. environmental stewardship by all levels of decision makers.

2.1 Respect for Ecological Integrity

Although the precise level of acceptable environmental degradation is an unresolved element of sustainable development, there is a common understanding that respect for ecological integrity requires, at a minimum, conservation of the earth's "life-support systems." These are the ecological processes that "shape climate, cleanse air and water, regulate water flow, recycle essential elements, create and regenerate soil, and enable ecosystems to renew

themselves" (IUCN 1991). In practice, this requires maintaining the ability of the environment—and avoiding irreversible harm to this ability—to act as a provider of inputs (carrying capacity) and as a "sink" for wastes (assimilative capacity).

Technology is important in determining carrying and assimilative capacities. Within limits, technology can increase the inherent productivity of natural resources and reduce the negative environmental effects of resource exploitation. If carrying capacity is exceeded, however, basic resources such as vegetation and soil become degraded, which threatens the stability of the ecosystem.

Sustainable development also respects the biological diversity on which basic ecological processes depend—processes that provide a stream of tangible and intangible services to humans. There are three aspects to biological diversity: genetic diversity, species diversity, and ecosystems diversity. Genetic diversity is the sum of chromosomal information contained in the genes of plants and animals. Species diversity refers to the variety of living organisms on the earth. Ecosystem diversity is the variety of habitats and biotic communities on the earth.

2.2 Efficient Use of Natural, Manufactured, and Social Capital

Efficient development has four main characteristics: sustainable resource use; waste management based on pollution prevention; full cost accounting; and anticipation, prevention, and precaution in the face of uncertainty.

2.2.1 Sustainable Resource Use

Respect for ecological carrying capacity requires the sustainable use of natural resources. The sustainable harvesting of renewable resources respects regeneration rates and avoids irreversible harm to the economic productivity of such resources (e.g., the store of biological diversity).

Because nonrenewable resources cannot regenerate (within meaningful human time frames), different criteria must apply. In theory, a sustainable output

rate for nonrenewable resources is that which maintains the size of the stock relative to demand. In practice, this means that depletion rates should be low enough to ensure a high probability of an orderly transition to the discovery, development, and widespread acceptance of substitutes. Sustainable output rates can thus be increased by discovering and exploiting new reserves (increasing the stock); recycling extracted resources (replenishing the stock); and hastening the development of substitutes (increasing the amount available for current consumption by reducing future demand). Ensuring the appropriate output rates for nonrenewables is a primary function of the market, but it may require some government intervention to ensure that price signals are correct.

Many commentators argue that sustainable development also requires the use of nonrenewables in a way that limits the negative impacts of activities associated with their production and consumption on the continued productivity of renewable resources and environmental life-support functions (e.g., Goodland 1994).

2.2.2 Waste Management Based on Pollution Prevention

Respect for ecological assimilation rates requires maintaining wastes within the assimilative capacity of the environment. Because we cannot always know the assimilative capacity, there is now a widespread consensus that the most efficient waste management policies are predicated on the pollution prevention hierarchy, which emphasizes the early, rather than the final, stages of a material's life cycle:

- source elimination/reduction;
- reuse/recycle;
- safe treatment; and
- safe release or disposal.

2.2.3 Full Cost Accounting and the Polluter Pays Principle

It is a fundamental principle of contemporary economic theory that efficient decisions must account for the full costs and benefits of alternative choices. In particular, sustainable development requires accounting

for both the short- and the long-term external environmental impacts of development. Although there is some dispute in the academic literature about the most efficient manner to ensure that all external costs are accounted for, there is an emerging consensus among policy makers that, in general, the most appropriate way to do so is to adopt the polluter pays principle, which reflects the idea that environmental externalities should be internalized by those who cause them.

2.2.4 Anticipation, Prevention, and Precaution

In many cases, the ideal of decision making based on complete information is unattainable, and decisions must be made based on uncertainty. There is now widespread realization that policies based on anticipation and prevention are both more effective and less expensive in the long run than policies of react and cure, which can lead to high remediation costs. (Specific policies will inevitably vary, depending on the ability and incentives to anticipate and prevent in each situation; in some cases, strong remedial requirements may continue to be required.)

2.3 Promotion of Equity

Sustainable development also requires that the costs and benefits of development be shared equitably. Although the definition of equitable distribution is obviously a value judgment, sustainable development requires, at a minimum, that decisions account for distributional impacts within society, between regions, and between generations.

2.4 Participation of Stakeholders

Most proponents of sustainable development share the view that participatory decision making is required to translate well-meaning principles into concrete action. Rationales for this view include the following:

- to ensure a fair distribution of costs and benefits, affected parties need an opportunity to articulate their self-interest;
- involvement of affected parties can enhance the quality of information available to decision makers;

- early and meaningful involvement can enhance the potential for support of decisions; and
- the opportunity to participate in decisions that affect one's destiny is a key element of self-empowerment and self-actualization.

2.5 Environmental Stewardship by All Levels of Decision Makers

Principles of environmental stewardship are premised on a recognition that each individual's actions have environmental, social, and economic significance, and therefore all individuals have a role to play in contributing to sustainable development. To be implemented effectively, the objectives of sustainable development must be widely shared; all decision makers must desire and know how to act in accordance with the foregoing core principles. This requires that governments promote sustainable development through leadership by example and through education. It also requires a fostering of individual, institutional, and collective responsibility for long-term, global impacts as well as immediate, local consequences of actions.

3.0 SUSTAINABILITY: DIFFICULTIES AND PROMISE

These five "core" principles may usefully inform policies and programs to design sustainable futures. But sustainability remains an elusive concept. It is still evolving and sometimes means different things to different people. In his paper for this conference, Oran Young notes that

sustainable development is a generative concept that is extremely difficult to turn into an operational paradigm or, in other words, to translate into practical guidelines in a manner that is acceptable to a variety of constituencies. There is a danger, therefore, that the idea of sustainable development, evocative as it is, will ultimately prove to be a dead end in the sense that *it fails to provide a workable criterion for making decisions about human/environment relations* [emphasis added].

This insight is important, particularly to those who expect the concept to make a measurable difference in the Arctic. The difficulty Mr. Young identifies reflects not only the generality of the concept but also the emergence of two broad interpretations of the sustainability paradigm. A mainstream interpretation focuses on the application of tools and techniques to increase the efficiency with which natural resources are developed and used. In this view, the purpose of sustainable development is to push back "limits to growth." This essentially anthropocentric view contrasts with a more radical, biocentric interpretation of sustainability that suggests that the maintenance and restoration of ecological integrity should be the *sine qua non* of sustainable human activity and that the natural environment should be valued not only for its resource potential but also for its very existence.

In some respects, these two interpretations share common ground. Both stress the importance of meeting the needs of the poor, and both note that the ability of the natural environment to meet these and other needs is limited by social organization and the state of technology. Moreover, both stress the need for long-term considerations by noting the importance of intergenerational equity. Nevertheless, the underlying ideologies of the two approaches differ, making it difficult to implement all "core" principles and to define criteria for making decisions about human/environment relations.

This difficulty is compounded in the Arctic, not only because it is fragile or vulnerable according to most ecologists, but also because it is the home of many Aboriginal peoples whose values and cultures differ from the mainstream in the nation states in which they reside. At the risk of great oversimplification, it may be that policies and preferences of most national governments in the Arctic and of the Northern Forum fall closer to the anthropocentric interpretation of sustainability, while those of Aboriginal peoples more closely approximate the biocentric view.

4.0 ABORIGINAL PEOPLES AND SUSTAINABILITY IN THE ARCTIC

It would serve no useful purpose in this short paper to survey the environmental and social health of the

Arctic or the broad range of economic developments that might be undertaken there. Such details are already available (Hyde, Bregha, and Wright 1994).

It is important, however, to note that the Arctic is changing quickly as a result of demographic, economic, environmental, technological, cultural, and other factors—some internal to the region, others global in scope. The pace of change is accelerating as the Arctic's oil, gas, mineral, and hydro resources are more fully delineated and developed for the global market and as the region is integrated into the broader world through mass communications technology. The need for sustainability policies is pressing in this vibrant economic and social environment, but the very pace of change poses major challenges in successfully implementing such policies.

Policies and decisions to promote sustainable development in the Arctic have also to respond to external pressures over which Arctic residents and governments have limited control. Two examples illustrate this point: human health concerns resulting from bioaccumulation in the food web of organochlorines and other contaminants transported to the Arctic from Europe, Asia, and North America (Pfirman 1994); and the social, psychological, and economic implications to Aboriginal peoples of the collapse of the sealskin and fur markets as a result of the anti-harvest and anti-fur movement in western Europe (Lynge 1992).

The fact that most change in the region is externally induced and that, with the exception of those of Iceland, Aboriginal peoples form a significant portion and local majority of permanent residents of the region raises a central question: sustainable development of what, for whom? In particular, what does sustainable development offer Inuit, Inupiat, Sami, Komi, and other Arctic Aboriginal peoples?

These are key questions, for sustainability is not just about policies, programs, tools, and techniques. At heart it is about power, values, and knowledge, for these determine the scale, pace, and timing of development and the priority given to competing resources. This is particularly so in the Arctic, for power over this region has rested in nation states dominated by southern metropolitan centres. The

Arctic has been seen by decision makers in the south as a resource hinterland whose exploitation would benefit the nation as a whole. In the twentieth century, the full panoply of state-sponsored science has been used to support exploitation of Northern resources. Whether this view of the Arctic has changed significantly is a moot point, for developing its energy and mineral resources is now portrayed by some as a global as well as a national necessity.

Sustainability as an approach toward the future resonates among Arctic Aboriginal peoples. Passing on unimpaired the natural environment from one generation to the next, adopting cultural health and diversity as unashamed goals of economic development, and integrating these goals with carrying and assimilative capacities all fit well with Aboriginal views and advocacy.

At the 1993 conference of Arctic parliamentarians, Jens Dahl (1993) broached the connection between Aboriginal peoples and sustainability with the following words:

In order to integrate indigenous peoples of the Arctic into the decision-making process, in order to adhere to the rights of indigenous peoples as outlined in various international settings (ILO-Convention 169; the UN Draft Declaration Concerning the Rights of Indigenous Peoples; and others) and in order to protect the Arctic environment and guarantee a sustainable management of renewable resources, it is a precondition that indigenous peoples have the organizational capacity to and are given the empowerment to attain control over their own affairs and destiny. The Arctic history shows us that any development which intends to be based on mutual understanding and respect starts with this [emphasis added].

Essentially Dahl suggested that empowerment of Aboriginal peoples—self-determination—is a requirement for sustainable development. This view has influential adherents. The Brundtland Commission suggested that clearly defined legal rights of Aboriginal peoples to land and natural resources in

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their homelands were an important requirement for sustainability. This was not portrayed solely as a matter of social justice, for the commission believed that Aboriginal peoples had something of value to impart to non-Aboriginal peoples:

These communities are the repositories of vast accumulations of traditional knowledge and experience that link humanity with its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their *traditional skills in sustainability managing very complex ecological systems* [emphasis added].

The 1991 redraft of the World Conservation Strategy—Caring for the Earth—acknowledged the place of Aboriginal people in the hoped-for global transition to sustainability. Article 8 (j) of the Biodiversity Convention places an onus on contracting parties to respect, preserve, and broaden the application of traditional knowledge. But it is the Rio Declaration and Agenda 21 that most clearly address the theme of Aboriginal peoples and sustainability. Principle 22 of the Rio Declaration notes that

indigenous peoples and their communities, and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Article 26.6 of Agenda 21 states:

Governments, in full partnership with indigenous people and their communities should, where appropriate:

- (b) Co-operate at the regional level, where appropriate, to address common indigenous issues with a view to recognizing and strengthening their participation in sustainable development.

At the national level, Arctic Aboriginal peoples have taken significant strides toward self-determination

(Jull and Roberts 1991). Land-claim agreements in northern Canada were stimulated by the 1971 Alaska Native Claims Settlement Act and home rule in Greenland, achieved in 1979. Sami parliaments now operate in Norway, Sweden, and Finland (Brantenberg et al. 1995), although it remains to be seen whether these essentially advisory institutions will be supplemented by Sami rights to land and natural resources (Sillanpaa 1994; Brantenberg et al. 1995). Sami residents on the Kola Peninsula in the Federation of Russia are pressing for Scandinavian-style political institutions and have expressed interest in Canadian-style land rights. It is unclear, however, what the impact might be in Arctic Russia of President Yeltsin's April 1992 decree requiring county administrations and Aboriginal peoples to jointly define areas in which Aboriginal peoples will have priority rights to use land for herding, hunting, fishing, and trapping. This same decree requires the government of Russia to work with Aboriginal peoples to define rules governing the use of national resources in areas used and occupied by Aboriginal peoples (Fenge and Reimer 1994).

Progress on rights to land and natural resources and self-determination by Aboriginal peoples within each Arctic nation is uneven, but progress nationally is mirrored on the circumpolar stage. Resolutions passed by the Inuit Circumpolar Conference (ICC) since 1977 stress connections between economic development and environmental management, cultural protection and enhancement, and Inuit involvement in decision making. The Inuit Regional Conservation Strategy and Comprehensive Arctic Policy are further expressions of these connections. Inuit have been careful to couch self-determination in terms of partnerships and political accommodations with governments.

The Horsholm Declaration (appendix C), signed in 1991 by Aboriginal leaders representing the ICC, the Nordic Sami Council, and the USSR Association of Northern Small Peoples, glues together sustainable and equitable development with Aboriginal self-determination. The declaration is also notable for its biocentric view. While it seeks "new partnerships between the governments and the indigenous people...to meet the often overwhelming challenges

of...rapid global change," it clearly appreciates that economic development can be environmentally and culturally sustainable only if state governments "recognize and accommodate the rights of Aboriginal peoples to self-government, lands, renewable and non-renewable resources, and...recognize their cultural, social and economic rights."

This declaration is important as a collective statement by Aboriginal peoples designed to influence implementation of the AEPS, to move this strategy toward planning for sustainability, and to further the case for active involvement of Aboriginal peoples in all components of the initiative. In this it succeeds admirably. The Nuuk Declaration of 1993 not only incorporates many of the "core" sustainable development principles outlined earlier, but also reflects the spirit and intent of the Horsholm Declaration. When meeting at Nuuk in 1993, Arctic governments agreed to establish a task force on sustainable development (table 1). Aboriginal peoples have participated in and followed closely the work of this task force.

Successes at national levels in promoting Aboriginal self-determination and persuading governments to share power and to cooperatively manage the environment are mirrored in the AEPS agenda, which reflects many policy and research issues of importance to Aboriginal peoples. The ICC, the Sami Council, and the newly named Association of Indigenous Minorities of the North, Siberia, and the Far East Russian Federation have status in this initiative as permanent observers, and Aboriginal people are included on some national delegations. In the wake of these political gains, all concerned with sustainability in the Arctic and with implementation of the AEPS may turn to another key issue: the information base for sustainability decision making.

5.0 SUSTAINABILITY AND TRADITIONAL ECOLOGICAL KNOWLEDGE

The Nuuk Declaration recognizes

the special role of the indigenous peoples in environmental management and development in the Arctic, *and of the significance of their knowledge and traditional practices,*

and...their effective participation in the achievement of sustainable development in the Arctic [emphasis added].

Table 1. The mandate and agenda of the AEPS Task Force on Sustainable Development.

Mandate of the Task Force:

to propose steps governments should take to meet their commitment to sustainable development in the Arctic, including the sustainable use of renewable resources by Indigenous peoples, taking into account that management, planning, and development activities shall provide for the conservation, sustainable use, and protection of Arctic flora and fauna for the benefit and enjoyment of present and future generations, including local populations.

Objective:

to prepare reports and make recommendations on opportunities to enhance Indigenous peoples' economies and to improve the environmental, economic, and social conditions of Arctic communities through the sustainable utilization of natural resources, while protecting the cultures of Indigenous peoples.

Studies:

- Trade Policies, Opportunities, and Barriers Related to Sea Mammals
- Collapse of the Arctic Seal Skin Market: Retrospective and Sustainable Options
- Intervention in Planned European Union Ban on Wild Fur Products

Objective:

to prepare reports on specific issues and problems presented to the conservation, sustainable use, and protection of Arctic flora and fauna by management, planning, and development activities, and proposals for measures to mitigate or resolve such issues and problems.

Studies:

- Sustainable Use of Northern Timberline Forests, including Reindeer Grazing
- Opportunities and Problems Associated with Arctic Tourism (Svarland)
- 1973 Polar Bear Convention

Objective:

to consider the needs for new knowledge, and ways of facilitating communication and sharing information.

Study:

- Communication and Education Strategy for Arctic Sustainable Development

Additional work of the Task Force:

- Regional application in the Arctic of Agenda 21
- Development of guidelines for application of environmental impact assessment in the Arctic

In addition, it promised cooperation between Arctic nations "to strengthen the knowledge base and to develop information and monitoring systems." It is likely that traditional ecological knowledge (TEK), sometimes called Indigenous knowledge, could be of real assistance in achieving these objectives. Information about the natural environment is a key ingredient in decision making for sustainability. Yet much remains to be learned about Arctic ecology before we can claim to understand the effects of human decisions made inside and outside the region and before we can define carrying and assimilative capacities with a degree of confidence. In short, our ability to implement sustainability policies and programs is greatly limited by the paucity of scientific knowledge about the Arctic. In the absence of that knowledge, adherence to the precautionary principle as outlined in the Nuuk Declaration would likely restrict or even prevent hoped-for resource development projects.

From a purely practical viewpoint, generating and incorporating TEK in decision making is attractive, for in the Arctic, scientific research is expensive, most data are recent, and long-term baseline data are sometimes not available. In the last ten years there has been an explosion of interest in TEK by academics and others stimulated, in part, by cooperative management regimes set up as a result of land-claim and self-government agreements (Freeman and Carbyn 1988; Sallenave 1994). The AEPS is sponsoring important TEK work (Hansen 1994), but policy and decision making in the Arctic does not yet benefit significantly from this source of information—institutional, political, financial, and other barriers need to be overcome. But what is TEK? Mary Simon notes that

indigenous knowledge reflects an elaborate interrelationship between information and culture and as such can vary in detail and complexity from group to group and region to region. These knowledge systems, however, are not merely collections of fact. Working with indigenous knowledge is, therefore, a commitment to a process which respects it as a knowledge system and cannot be separated from the cultural context within which it operates (in Hansen 1994).

Most TEK studies deal with the knowledge that Aboriginal peoples have of wildlife distribution, abundance, and behaviour, and many researchers treat this knowledge as data to be fitted into scientific models. This not only misses the point about the nature of TEK, but it also shows an overly narrow appreciation of what TEK is and can be used for. If collected appropriately, TEK can go beyond accounts of land and resource use. By drawing upon and correctly interpreting detailed environmental observations made by Aboriginal people when on the land, TEK can illustrate ecological change. Such perspectives are important, particularly in light of predicted impacts in the Arctic of global warming and continuing human health concerns resulting from food web contamination by transboundary pollutants. Like science, this type of research can produce information to serve Aboriginal and non-Aboriginal peoples alike. But more than this, the manner in which Arctic states and the AEPS deal with TEK will reveal, in part, the extent to which they intend sustainable development to serve the objectives of Aboriginal peoples, for, as many commentators have noted, respect for TEK is also respect for those who hold this knowledge. A recent and a soon-to-be-published study on the Hudson Bay region of northern Canada illustrate the potential of this type of work (McDonald, Arragutainaq, and Novalinga 1995 and forthcoming).

5.1 The Hudson Bay Region

Hudson Bay is one of the world's largest inland seas; it includes James Bay, Hudson Strait, and all inter-connecting channels (fig. 1). The expansion of development projects throughout the bioregion over the last fifty years and of large-scale hydroelectric development in the last twenty to thirty years, with further projects planned, has raised ecological, social, cultural and economic concerns—primarily among resident Cree and Inuit. Fearing that incremental development was compromising the bioregion's carrying capacity, three organizations—the Canadian Arctic Resources Committee, the Municipality of Sanikiluaq, and the Rawson Academy of Aquatic Science—obtained funding from Canadian and American foundations, industry, and governments to carry out a three-year research program beginning in 1992. The overall purpose of the program was to situate future development of the region within a



Figure 1. Hudson Bay Basin: First Peoples

sustainability framework. More specific goals included the following:

- to assess the potential sensitivity of the region to cumulative impacts induced by changes both within and external to it;
- to define conceptual and informational deficiencies from traditional ecological knowledge and scientific perspectives that limit the ability to assess problems facing the region;
- to discuss findings as part of an iterative process of information sharing among all interested parties, including government agencies, energy corporations, and Cree and Inuit.

The TEK component of the program brought together representatives of twenty-nine of the thirty-four Inuit and Cree communities in the region in nineteen five-day workshops. Participants were asked to

- describe important biological, physical, and human processes influencing the behaviour of ecological communities in Hudson and James bays;
- identify ecological changes occurring in the bays and surrounding lands;
- assess the effects of human activities, including hydroelectric, mining, and forestry development, on economically and ecologically important wildlife species.

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This research process was carried out by Cree and Inuit with the assistance of an advisory committee of three academics, one researcher from Indian and Northern Affairs Canada, and a consultant. All information generated at the community workshops was recorded, translated into English, and transcribed. The resulting text was over two thousand pages in length. It was then mapped and converted into a geographical information system (GIS) database to illustrate ecological components, processes, and changes.

A first analytical task was to construct a food web of Hudson Bay (fig. 2). In doing so, community representatives listed 174 animal, bird, fish, and plant species. Environmental observations were broad, rich, and detailed and reached back fifty years, providing a baseline that scientists in the program envied. Certain plants, insects, and animals were identified as indicators of environmental change.

In some fields of inquiry, TEK supported conclusions derived from science. This was the case in increasing variability in climate and weather patterns and seasonal air temperatures. In other fields, such as currents, sea ice, and polynya and lead formation, TEK was able to expand greatly upon limited scientific knowledge. In relation to key species hunted by Inuit, including polar bears and beluga whales, TEK and science disagreed as to likely numbers, distribution, and annual travel patterns. When observations and interpretations were pieced together, the TEK evidence suggested the natural environment was changing rapidly as a result of human decisions both inside and outside the region and as a result of natural processes (table 2). Consequently, Inuit and Cree are suggesting with some urgency that TEK be used in resource planning and project-specific environmental assessment in the region, and that this information guide the formulation of sustainability policies.

TEK is seen by Cree and Inuit in the region as a web of relations between people and their environment that needs to be understood if both are to be sustained. The program showed that TEK could make a real contribution to resource planning and decision making in a large region by providing indicators and early warning signs of environmental changes that result

from local, regional, or global processes. Importantly, this research program was carried out in the face of great political disagreements between governments and Aboriginal peoples as to what resource developments should be undertaken in the region.

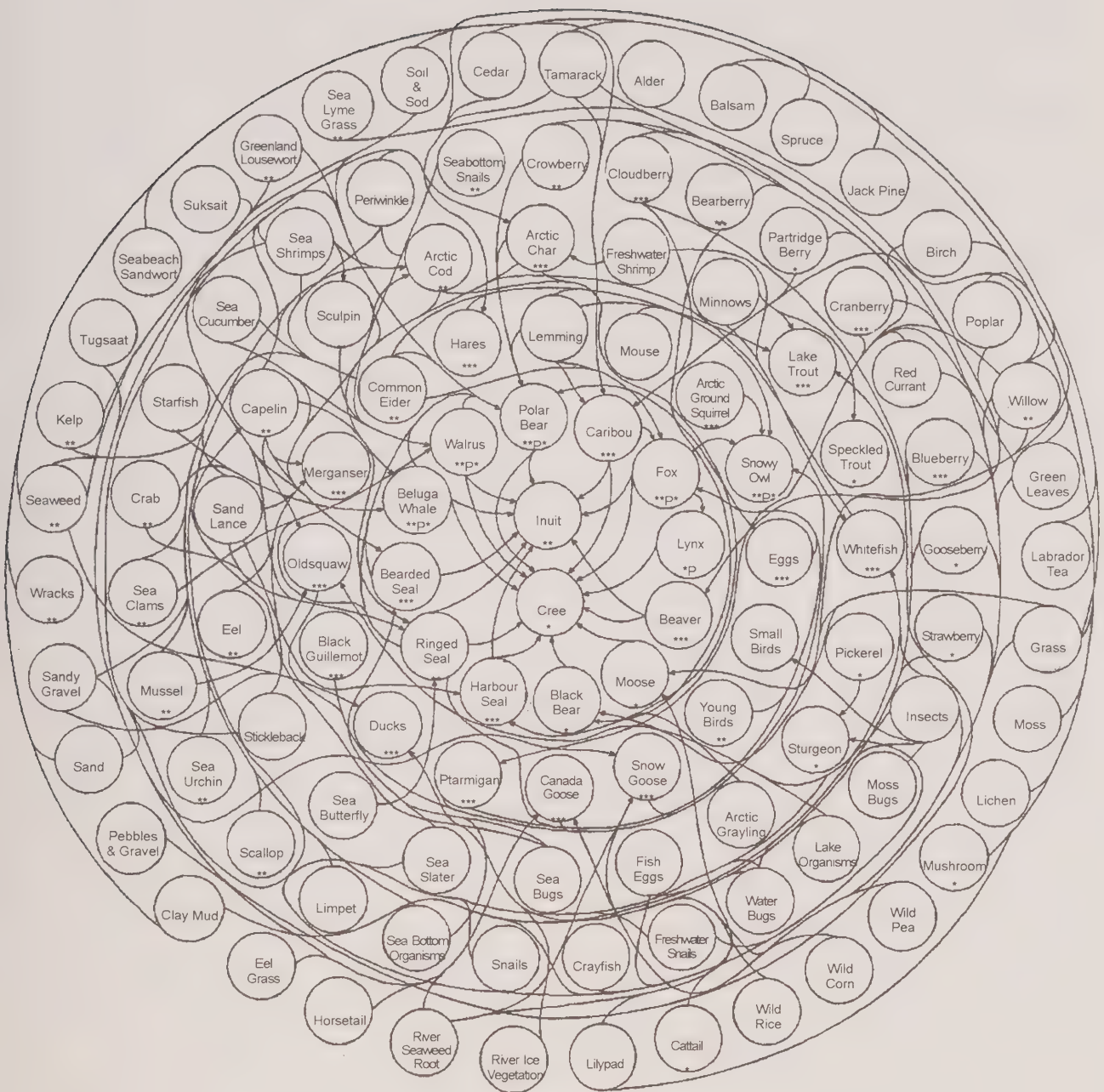
While much research needs to be done, it seems that TEK could help to provide the "workable criterion for making decisions about human/environment relations" identified by Oran Young, and ensure that sustainable development is more than declaratory rhetoric.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Sustainable development will continue to mean different things to different people, but the goal of integrating ecological and economic concerns in decision making in the Arctic is here to stay, as is the shared objective of living within the region's carrying and assimilative capacities. What, then, are some of the challenges ahead if the "core" concepts outlined earlier are to guide decision making and to do so in line with political declarations signed in Rovaniemi, Nuuk, and Horsholm?

Perhaps the first challenge is to continue developing the political will to address sustainable development in collective fora such as the AEPS and the proposed Arctic Council. Cooperation between the eight Arctic countries on environmental issues has grown considerably over the last five to ten years, stimulated in large measure by programs under the AEPS. Dealing with the legacy of unsustainable development through remedial action will remain a needed focus for all Arctic nations and the AEPS. But moving wholeheartedly into planning, policies, and practices for sustainability will require an increased commitment to joint and cooperative action between Arctic states, subnational governments, and the region's Aboriginal peoples.

The AEPS brings together ministers responsible for the environment. Sustainable development, however, is within the purview of many portfolios. Might it be helpful and necessary in making sustainable development the *sine qua non* of activities in the Arctic to bring together ministers responsible for



Cree *
 Inuit **
 Cree & Inuit ***
 Inuit (Present) & Cree (Past) **P*

Figure 2. Hudson Bay Food Web (McDonald, Arragutainaq, and Novalinga 1995)

Table 2. Summary of environmental changes in the Hudson Bay bioregion observed by Cree and Inuit.

	Eastern James Bay	Eastern Hudson Bay	Hudson Strait	Northwestern Hudson Bay	Western Hudson Bay	Western James Bay
Weather	<ul style="list-style-type: none"> colder winters in reservoir areas shorter fall and spring seasons greater variability in fall increased snowfall 	<ul style="list-style-type: none"> persistence of cold weather into spring snow melts later spring and summer cooling trend less rain; fewer thunderstorms 	<ul style="list-style-type: none"> greater variability; less predictable cooling trend new snowfall cycle longer winters; snow melts later less rainfall 	<ul style="list-style-type: none"> greater variability warmer and shorter winters snow falls and melts earlier cool summers in early 1990s 	<ul style="list-style-type: none"> longer winters colder springs snow melts faster 	<ul style="list-style-type: none"> shorter and warmer winters spring wind shifts several times a day
Sea ice	<ul style="list-style-type: none"> salinity changing along northeast coast more freshwater forming in the bay less solid in La Grande River area; freezes later, breaks earlier 	<ul style="list-style-type: none"> freezes faster solid ice cover is larger and thicker fewer polynyas floe edge melts before breaking up 	<ul style="list-style-type: none"> freezes faster poor quality landfast ice extends further off-shore polynyas freeze floe edge melts before breaking up 			
Currents	<ul style="list-style-type: none"> weaker in Eastmain area swifter and less predictable north of La Grande River 	<ul style="list-style-type: none"> weakening currents 	<ul style="list-style-type: none"> weakening currents 	<ul style="list-style-type: none"> weaker currents in Roes Welcome Sound 		
Rivers	<ul style="list-style-type: none"> seasonal reversal in levels and flow decline in water quality unstable ice conditions on La Grande River; freezes later, breaks earlier vegetation dying along diverted rivers 	<ul style="list-style-type: none"> decreased water levels and river flow 	<ul style="list-style-type: none"> decreased water levels and river flow 	<ul style="list-style-type: none"> decreased water levels and river flow 	<ul style="list-style-type: none"> seasonal reversal in water levels and flow increased salinity, erosion and sediment in Nelson River decline in water quality 	<ul style="list-style-type: none"> decreased water levels and river flow in southern James Bay rivers increased erosion and mud slides
Atmosphere	<ul style="list-style-type: none"> change in sky colour 	<ul style="list-style-type: none"> change in sky colour sun's heat blocked by haze 	<ul style="list-style-type: none"> change in sky colour sun's heat blocked by haze 	<ul style="list-style-type: none"> change in sky colour 	<ul style="list-style-type: none"> change in sky colour 	<ul style="list-style-type: none"> change in sky colour
Canada geese and snow geese	<ul style="list-style-type: none"> coastal and inland habitat changes coastal flyways have shifted east fewer being harvested in spring and fall large flocks of non-nesting/molting geese along coastal flyway 	<ul style="list-style-type: none"> smaller flocks of Canada geese arrive in Belcher Islands since 1984 increase in non-nesting/molting geese in Belcher Islands and Long Island 	<ul style="list-style-type: none"> new snow goose migration routes increase in number of molting snow geese Canada geese no longer nest in Soper River area 	<ul style="list-style-type: none"> more Canada geese in Repulse Bay area during summers of 1992 and 1993 	<ul style="list-style-type: none"> more snow geese migrating to and from the west habitat changes at Marsh Point staging area earlier and shorter fall migration 	<ul style="list-style-type: none"> habitat changes in Moose Factory area more snow geese flying in from west Canada geese arrive from the north first part of June change in fauna migration patterns
Beluga	<ul style="list-style-type: none"> decrease in numbers 	<ul style="list-style-type: none"> decrease in numbers 				
Polar bear		<ul style="list-style-type: none"> increase in numbers 		<ul style="list-style-type: none"> increase in numbers appear leaner and more aggressive 		
Walrus		<ul style="list-style-type: none"> shift away from Sleeper Islands and Belcher Islands 	<ul style="list-style-type: none"> increase in numbers around Nottingham Island 	<ul style="list-style-type: none"> decrease in numbers near Arviat and Whale Cove increase in numbers near Coral Harbour and Chesterfield Inlet 	<ul style="list-style-type: none"> decrease in numbers around Attawapiskat 	
Fish	<ul style="list-style-type: none"> mercury contamination loss of adequate habitat for several species, e.g., whitefish, sturgeon, pike, etc. 	<ul style="list-style-type: none"> decrease in arctic char and arctic cod in Inukjuak area 		<ul style="list-style-type: none"> cod are no longer found near shores off Cape Smith and Repulse Bay 		
Moose	<ul style="list-style-type: none"> sharp decrease in numbers 				<ul style="list-style-type: none"> change in the taste of the meat 	
Caribou		<ul style="list-style-type: none"> change in diet very large herds travelling closer to coast 	<ul style="list-style-type: none"> increase in abnormal livers, i.e., spots and lumps 	<ul style="list-style-type: none"> sharp increase in numbers crossing to islands change in diet 	<ul style="list-style-type: none"> migration route has shifted inland 	

economic development, fiscal policy, and foreign policy? The proposed Arctic Council, which is to have a mandate broader than that of the AEPS, would seem to be an institutional vehicle to provide for this.

A second challenge is to define a policy, planning, and research agenda that reflects more fully the various components of sustainability and to have this agenda acted upon by national governments and regional and circumpolar bodies, particularly the AEPS. In dealing with transboundary pollution and management of migratory species of wildlife, the case for bilateral or multilateral action between states or subnational governments is clear and compelling. This is not necessarily the case for other policy fields, such as nonrenewable resource development. Indeed, development of oil, gas, and minerals is not on the agenda of the AEPS sustainable development task force (table 1). This is not an oversight.

Notwithstanding the reticence of national governments to have planned and potential non-renewable development addressed in multilateral fora, the manner and speed with which energy and mineral resources in the Arctic are developed is a central component of sustainability. As such, improving and potentially harmonizing procedural and substantive standards for development of these resources could usefully be looked at by the AEPS or the Arctic Council. Article four of the Nuuk Declaration points in this direction by putting an onus on national governments to "promote legislation required for the protection of the Arctic environment." Development of guidelines for application of environmental impact assessment, proposed by Finland and being discussed in the AEPS sustainability task force, also leads in this direction.

A third challenge concerns the legal underpinnings to environmental and economic cooperation between Arctic states. The AEPS was established through a politically important but legally nonbinding declaration. Nevertheless, article ten of the Nuuk Declaration promises that Arctic nations will cooperate to develop new legal instruments to protect the Arctic environment. There seems to have been limited use of this article, which might also open the door for a re-examination of the legal status of the AEPS and the proposed Arctic Council.

Finally, the whole question of TEK needs to be given far greater weight in environmental management throughout the circumpolar world. Some dismiss TEK as anecdotal; others see it as ideologically tainted. While this type of knowledge has to be understood in the cultural context in which it is generated, it should be clear that it has much to offer. Finding ways and means to integrate TEK into decision making is a particularly important challenge to Arctic governments and to the AEPS.

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APPENDIX A

The Rovaniemi Declaration

June 14, 1991 - The Rovaniemi Declaration - signed by the Eight Arctic Nations

Declaration on the Protection of the Arctic Environment

We, the Representatives of the Governments of Canada, Denmark, Finland, Iceland, Norway, Sweden, the Union of Soviet Socialist Republics and the United States of America;

Meeting at Rovaniemi, Finland for the Ministerial Conference on the Protection of the Arctic Environment;

Deeply concerned with threats to the Arctic environment and the impact of pollution on fragile Arctic ecosystems;

Acknowledging the growing national and international appreciation of the importance of Arctic ecosystems and an increasing knowledge of global pollution and resulting environmental threats;

Resolving to pursue together in other international environmental fora those issues affecting the Arctic environment which require broad international cooperation;

Emphasizing our responsibility to protect and preserve the Arctic environment and recognizing the special relationship of the indigenous peoples and local populations to the Arctic and their unique contribution to the protection of the Arctic environment;

Hereby adopt the Arctic Environmental Protection Strategy and commit ourselves to take steps towards its implementation and consider its further elaboration.

We commit ourselves to a joint Action Plan of the Arctic Environmental Protection Strategy which includes:

- Assessment of potential environmental impacts of development activities;
- Full implementation and consideration of further measures to control pollutants and reduce their adverse effects to the Arctic environment.

We intend to assess on a continuing basis the threats to the Arctic environment through the preparation and updating of reports on the state of the Arctic environment, in order to propose further cooperative action.

We also commit ourselves to implement the following measures of the Strategy:

- Arctic Monitoring and Assessment Programme (AMAP) to monitor the levels of, and assess the effects of, anthropogenic pollutants in all components of the Arctic environment. To this end, an Arctic Monitoring and Assessment Task Force will be established. Norway will provide for an AMAP secretariat;

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- Protection Prevention, Preparedness and Response in the Arctic, to provide a framework for future cooperation in responding to the threat of environmental emergencies;
- Conservation of Arctic Flora and Fauna, to facilitate the exchange of information and coordination of research on species and habitats of flora and fauna.

We agree to hold regular meetings to assess the progress made and to coordinate actions which will implement and further develop the Arctic Environmental Protection Strategy.

We agree to continue to promote cooperation with the Arctic indigenous peoples and to invite their organizations to future meetings as observers.

We agree to meet in 1993 and accept the kind invitation of the Government of Denmark and the Home Rule Government of Greenland to hold the next meeting in Greenland.

Wherefore, we, the undersigned Representatives of our respective Governments, recognizing its political significance and environmental importance, and intending to promote its results, have signed this Declaration.

APPENDIX B

The Nuuk Declaration

September 16, 1993 - The Nuuk Declaration - signed by the Eight Arctic Nations

We, the Ministers of the Arctic Countries,

Recognizing the special role and responsibilities of the Arctic Countries with respect to the protection of the Arctic environment,

Acknowledging that the Arctic environment consists of ecosystems with unique features and resources which are especially slow to recover from the impact of human activities, and as such, require special protective measures,

Further acknowledging that the indigenous peoples who have been permanent residents of the Arctic for millennia, are at risk from environmental degradation,

Determined, individually and jointly, to conserve and protect the Arctic environment for the benefit of present and future generations, as well as for the global environment,

Noting that in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it,

Recognizing the importance of applying the results of the United Nations Conference on Environment and Development to the Arctic region,

Welcoming the efforts of the eight Arctic Countries to implement, through the Arctic Environment Protection Strategy, relevant provisions of the Rio Declaration, Agenda 21 and the Forest Principles, efforts which include the Arctic Monitoring and Assessment Programme (AMAP), and the Working Groups on the Conservation of Arctic Flora and Fauna (CAFF), Emergency Prevention, Preparedness and Response, and the Protection of the Arctic Marine Environment,

Affirming Principle 2 of the Rio Declaration on Environment and Development which affirms that States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and development policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction,

Further affirming Principle 22 of the Rio Declaration, which states that: "indigenous people and their communities...have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development".

Hereby make the following Declaration:

1. We reaffirm our commitment to the protection of the Arctic Environment as a priority and to the implementation of the Arctic Environmental Protection Strategy.

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2. We adopt the report of the Second Ministerial Conference of the Arctic Environmental Protection Strategy, and endorse its provisions to implement the Strategy, in particular:
 - seeking resources to enable each country to fully participate in the program activities under the Arctic Environmental Protection Strategy;
 - endeavouring to support, through these resources, joint projects in order to ensure that each country is able to participate in the activities of the Arctic Monitoring and Assessment Programme (AMAP), including the completion of national implementation plans and the comprehensive assessment of results;
 - establishing a working group to assess the need for further action or instruments to prevent pollution of the Arctic marine environment and to evaluate the need for action in appropriate international fora to obtain international recognition of the particularly sensitive character of the ice-covered sea areas of the Arctic;
 - reaffirming the commitment to sustainable development, including the sustainable use of renewable resources by indigenous peoples, and to that end agreeing to establish a Task Force for this purpose;
 - underlining the necessity of a notification system and improved cooperation for mutual aid in case of accidents in the Arctic area;
 - reaffirming that management, planning and development activities shall provide for the conservation, sustainable use and protection of Arctic flora and fauna for the benefit and enjoyment of present and future generations, including local populations and indigenous peoples.
3. We will cooperate to conserve, protect and, as appropriate, restore the ecosystems of the Arctic. We will in particular cooperate to strengthen the knowledge base and to develop information and monitoring systems for the Arctic region.
4. We recognize that effective domestic environmental legislation is a prerequisite to the protection of the environment. As Ministers we shall promote legislation required for the protection of the Arctic environment.
5. We support the achievements of the United Nations Conference on Environment and Development, and state our beliefs that the Principles of the Rio Declaration on Environment and Development have particular relevance with respect to sustainable development in the Arctic.
6. We believe that decisions relating to Arctic activities must be made in a transparent fashion and therefore undertake to facilitate through national rules and legislation appropriate access to information concerning such decisions, to participation in such decisions and to judicial and administrative proceedings.
7. We recognize the special role of the indigenous peoples in environmental management and development in the Arctic, and of the significance of their knowledge and traditional practices, and will promote their effective participation in the achievement of sustainable development in the Arctic.

8. We believe that development in the Arctic must incorporate the application of precautionary approaches to development with environmental implications, including prior assessment and systematic observation of the impacts of such development. Therefore we shall maintain, as appropriate, or put into place as quickly as possible, an internationally transparent domestic process for the environmental impact assessment of proposed activities that are likely to have a significant adverse impact on the Arctic environment and are subject to decisions by competent national authorities. To this end we support the implementation of the provisions of the Convention on Environmental Impact Assessment in a Transboundary Context.
9. We underline the importance of prior and timely notification and consultation regarding activities that may have significant adverse transboundary environment effects, including preparedness for natural disasters and other emergencies that are likely to produce sudden harmful effects on the Arctic environment or its peoples.
10. We recognize the need for effective application of existing legal instruments relevant to the protection of the Arctic environment, and will cooperate in the future development of such instruments as needed. We support the early ratification of the United Nations Conventions on Biological Diversity and Climate Change.
11. We undertake to consider the development of regional instruments concerned with the protection of the Arctic environment.

APPENDIX C

The Horsholm Declaration

Declaration of the Arctic Indigenous Leaders Summit

We, the Representatives of the indigenous peoples organizations of the Arctic, being the Inuit Circumpolar Conference, the Nordic Sami Council, and the USSR Association of Northern Small Peoples;

Meeting at Horsholm, Denmark, for the first Arctic Indigenous Leaders Summit to seek greater mutual understanding and to further our cooperation;

Having respect for the traditional and continuing stewardship of our lands, waters, plants and animals; and for the traditional knowledge of our peoples;

Deeply concerned for the health, well-being and ultimate survival of our peoples, including recognition of our nutritional needs and the rights of renewable resource harvesters, and for the protection of our Arctic environment, both now and in the future;

Ever aware of the changes which have affected our peoples, our lands and our rights to decide for ourselves what our future shall be;

Recognizing that there is only one Arctic, and that we share one future together;

Affirming the requirement for sustainable and equitable development in our homeland;

Requiring state governments to recognize and accommodate the rights of aboriginal peoples to self-government, lands, renewable and non-renewable resources, and to recognize their culture, social and economic rights;

Commending the Arctic governments for their close cooperation with our organizations in the process leading up to the Declaration of Rovaniemi, and calling on those Arctic governments to fully implement the spirit as well as the words of the Declaration and of the Arctic Environmental Protection Strategy;

Declare that:

Arctic indigenous peoples desire not only to survive, but to thrive as indigenous peoples into this 21st Century. Arctic governments must take affirmative initiatives immediately to work with their indigenous peoples to bridge the rapid global change which impacts our peoples. Adequate resources must be made available by the governments to meet the real social, health, economic and educational needs of the indigenous peoples. New partnerships between the governments and the indigenous peoples must occur to meet the often overwhelming challenges of this rapid global change. Maximum self-determination of the indigenous people is desired.

We adopt as consensus statements of the Summit, the following:

1. Statement on Subsistence, the Traditional and Direct Dependence on Renewable Resources

2. Statement on Renewable Resource Harvesting

We agree to continue the collaboration begun here among the Arctic Indigenous Leaders by holding our Second Summit in 1993 to be organized by the Nordic Sami Council.

We further agree that in order to advance our mutual concerns, we will initiate a process leading up to the Second Arctic Indigenous Leaders Summit, to include the following issues:

- renewable resource harvesting and subsistence rights;
- traditional ecological knowledge; and
- the mandate and role of existing and future organizations relevant to the Arctic.

Done at Horsholm, 20 June 1991

Inuit Circumpolar Conference

Nordic Sami Council

USSR Association of Northern Small Peoples

Presentations

**Comanagement Regimes:
An Approach to the Sustainable
Development of Natural Resources in
the Arctic**

Duane Smith
Vice-Chair
Inuvialuit Game Council

HISTORICAL PERSPECTIVE

Through much of the twentieth century, the natural resources of the Arctic have been exploited with little regard for the Indigenous people of the region or the natural resources which sustain them. The Canadian western Arctic bore the brunt of this impact with the advent of industrial whaling in the previous century, the advance of the fur trade, the establishment of Distant Early Warning site ("DEW Line") radar installations, and an unprecedented level of oil and gas exploration, which began in the 1960s. It was in the face of this latter onslaught, with its associated environmental consequences and the continuing phenomenon of acculturation, that the concept of comanagement evolved.

For the Inuvialuit, the fears and distrust born of experience, lack of information, and lack of involvement in land and resource use decision making created a strong political demand for the settlement of a land claim which would guarantee their control and involvement in the management of their homeland. After fourteen years of negotiation, the Inuvialuit Final Agreement (IFA) was signed in 1984 and ratified by the passage of the Western Arctic (Inuvialuit) Claims Settlement Act (Canada 1984). Newly created organizations under the land claim, such as the Inuvialuit Regional Corporation (IRC), the Inuvialuit Development Corporation (IDC), and the Inuvialuit Land Administration (ILA), were formed to oversee the management of financial resources, Inuvialuit lands, and beneficiary rights. Another

significant outcome of the land claim negotiation was the development and acceptance of a system of co-management that, more than ever before, provided for a heightened level of community participation in resource management and at the same time increased institutional accountability. The text that follows describes the activities of the specific management bodies created as a result of the IFA which are responsible for ensuring that resources and lands are used sustainably. Similar processes are evolving elsewhere in the Canadian Arctic.

INUVIALUIT GAME COUNCIL

In anticipation of the eventual signing of the IFA, the Inuvialuit Game Council (IGC) was established in 1983 pursuant to the Northwest Territories Societies Ordinance. It has 100 percent Inuvialuit membership, which includes a chairman and a twelve-member board involving two representatives from each of the six Hunters' and Trappers' Committees (HTCs) from those communities included in the Inuvialuit Settlement Region (Aklavik, Inuvik, Tuktoyaktuk, Paulatuk, Sachs Harbour, and Holman Island). The IGC is charged with the responsibility of representing the collective Inuvialuit interest in all matters relating to the management of living resources, including habitat, within the Inuvialuit Settlement Region (ISR). The IFA described the role of the IGC as well as made provision for the establishment of the following five comanagement bodies: the Environmental Impact Screening Committee, the Environmental Impact Review Board, the Fisheries Joint Management Committee, the Wildlife Management Advisory Council of the Northwest Territories, and the Wildlife Management Advisory Council for the Yukon North Slope.

Each body is composed of 50 percent Inuvialuit and 50 percent government members, with a mutually agreed upon chairman. This composition guarantees the inclusion of Indigenous knowledge and cultural sensitivity in the process. All these comanagement bodies include extensive community consultation elements in their operating procedures.

The two Wildlife Management Advisory Councils (one for the Yukon North Slope and the other for the

Northwest Territories) deal primarily with birds and terrestrial wildlife. The Fisheries Joint Management Committee deals primarily with fish and marine mammals. The Environmental Impact Screening Committee and the Environmental Impact Review Board collectively make up the screening and review process for the settlement region.

In order to promote the efficient and informed operation of these comanagement bodies, the Inuvialuit approach to sustainable development and environmental management includes support for a full range of wildlife research programs, traditional knowledge studies, harvest monitoring, and the establishment of protected areas.

CONSERVATION AND PLANNING INITIATIVES

Since the signing of the IFA in 1984, the Inuvialuit and many government agencies have expended a considerable effort to make this comanagement process work. The evidence of this is the volume of work carried out over the past decade and what has been achieved as a result.

By way of example, the negotiation of the International Polar Bear Management Agreement for the Southern Beaufort Sea (1988) with the Inupiat of Alaska was the first time that a wildlife management agreement had been initiated and concluded by Aboriginal user groups in two countries. It is respected and supported by the governments of Canada and the United States.

Four other major comanagement planning initiatives have been completed to date. These are the Mackenzie Delta–Beaufort Sea Regional Land Use Plan (1990) developed in conjunction with the Gwich'in of the northern Mackenzie River basin; the Inuvialuit Renewable Resource Conservation and Management Plan; the Yukon North Slope Wildlife Conservation and Management Plan; and completion of six Community Conservation Plans. Some, if not all, of the Community Conservation Plans further identify other areas in their jurisdictions that deserve some level of protection (i.e., national wildlife or wilderness areas).

Collectively, these plans and processes are all important components of wildlife management and sustainable development in the settlement region (Bailey et al. 1995). The community conservation plans also have a vital role in the environmental evaluation of all development projects in the settlement region by way of the screening and review process. As per subsection 11(31) of the IFA, no federal or territorial license or approval shall be issued permitting any development to proceed without environmental screening and, if necessary, review.

ENVIRONMENTAL SCREENING AND REVIEW PROCESS

Over a decade ago, the IFA provided for what has become fashionably known as "sustainable development." This was accomplished by creating the comanagement mechanisms previously described in keeping with the primary goals of preserving cultural identity and values, enabling the Inuvialuit to be equal and meaningful participants in the Northern and national economy and society, while at the same time protecting Arctic wildlife, habitat, environment, and biological productivity. The environmental screening and review process plays a vital role in achieving these goals.

This two-stage process is implemented by the Environmental Impact Screening Committee and the Environmental Impact Review Board. It is important to emphasize that the Screening Committee and the Review Board are set up as nonpartisan organizations. The members are expected to contribute as experienced individuals and not as representatives of their appointing body. This approach has worked well, with each member bringing his or her own special expertise to the process.

The Environmental Impact Screening Committee makes an initial assessment, which includes recommendations of the HTCs, as to whether the proposed development is likely to have a negative environmental impact on wildlife, habitat, or Inuvialuit harvesting within the settlement region. If the Screening Committee decides there may be significant negative impact, the project can be referred to a competent review body, such as the Review

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Board, for a more detailed environmental impact assessment and review.

The Environmental Impact Review Board advises the appropriate minister whether a project should proceed and, if so, under what specific terms and conditions. Typically, these terms and conditions address the need for wildlife compensation, mitigation, and remedial measures. If need be, the Review Board may recommend that a project be subject to further assessment and review.

Over the years, this screening and review process has proven that it can thoroughly and efficiently review the great variety of proposals that have originated from federal and territorial agencies, universities, industry, and individuals. The vast majority of projects submitted for screening have been processed within sixty days or less from the date of receipt, while public reviews have been completed in six to twenty weeks. This is particularly noteworthy considering that the process is conducted by bodies that are not full-time committees.

Of course, not all projects submitted to the screening process are subsequently referred for review. Since its establishment in 1986, the Screening Committee has examined some two hundred project descriptions. Ten were referred for further assessment and review, but after voluntary withdrawals by the proponents, only three proposals have advanced to public review by the Review Board. These included two proposals for oil drilling programs in the Beaufort Sea and a third to commercially salvage driftwood from the Yukon North Slope. In each case, the Review Board proceedings were conducted expeditiously and cost-effectively.

As a matter of process, all development proponents are encouraged to consult with the affected communities in order to identify local concerns and potential conflicts. During examination of project descriptions, the Screening Committee and the Review Board place considerable emphasis on comments received from the local Inuvialuit communities. This process has ensured that the Inuvialuit, who depend on sustainable development in the region for their livelihood and future, are

intimately involved with each step, from the initial consultation to the final decision, as required under the provisions of the IFA (Green and Binder 1995).

Provisions established under the IFA have guaranteed that the Inuvialuit are meaningfully involved in the decision making and consultative processes and have ensured the development of what is a strong, integrated resource management process.

PROTECTED AREAS

The wildlife comanagement process facilitated the development of an umbrella conservation plan for the ISR under which were developed the individual Community Conservation Plans previously mentioned. These tools, along with the Mackenzie Delta–Beaufort Sea Regional Land Use Plan, were instrumental in the identification of areas that required some level of protection. These include national and territorial parks, sanctuaries, proposed national landmarks, and national wildlife areas.

There are at present, two national parks in the ISR, with a third in the advanced planning stage. There is also a territorial park.

The national and territorial parks in the Yukon portion of the ISR were established pursuant to section 12 of the IFA. The desirability of a national park on Banks Island was confirmed during the land claim negotiations as an area that deserved some level of protection and was further supported in the Sachs Harbour Community Conservation Plan (1992). The third proposed national park was identified in the Paulatuk Community Conservation Plan (1990).

These parks and other protected areas, such as bird sanctuaries and national landmarks, occupy some sixty thousand square kilometres of the settlement region, which is itself approximately a million square kilometres. As a point of reference, this is more or less the size of the province of Quebec. Protected areas occupy some 6 percent of the region, which translates to some 18 percent of the land mass. This is well above the international target of 12 percent, and is just one of the ways that the Inuvialuit are addressing the question of biodiversity.

For other areas within the settlement region, the screening and review process provides for orderly development. The Mackenzie Delta–Beaufort Sea Regional Land Use Plan and the Community Conservation Plans provide a strong link between both the screening and review and the wildlife comanagement processes.

CONCLUSION

With implementation of the IFA, the Inuvialuit became directly involved in formal resource and land use management. Coincident with this there has been a much greater exchange of information about the nature and impact of industrial activities and resource management decisions. This has in turn fostered a greater level of trust and cooperation between the Inuvialuit and non-Inuvialuit involved in comanagement. At the present time, the principles of sustainable development and use are applied under a comanagement regime with respect to resource harvesting and industrial activities. The success of the comanagement regime created under the IFA over the past eleven years has resulted in enthusiastic efforts to implement similar processes in other parts of the world.

The geographic and cultural characteristics of the Arctic suggest that the people of the region, more than most, must rely on the natural productivity of the land. The Inuvialuit have recognized that while industrial activity in the North can produce a wide range of benefits, it is the inherent productive capacity and physical character of the land that continue to sustain the people and their culture. Comanagement is proving to be a reasonable and balanced means of addressing the issue of sustainable resource use.

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Issues and Challenges for the Sustainable Development of Natural Resources in the Arctic: A Nordic Perspective

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My experience in Arctic development is based on participation in various research projects and industrial activities. I have also worked with the Finnish industry on various national and international committees and groups dealing with Arctic development. Therefore, in the following, I shall try to introduce industrial viewpoints on the development of natural resources in the Arctic.

The settlement and development of the Arctic region has always been based on the availability of abundant natural resources. The Indigenous and local people in the Arctic have developed their own cultures and means of livelihood. Their traditional economic activities, such as hunting, fishing, whaling, reindeer breeding, and Arctic transportation, have always been carried out in balance with the Arctic nature and local environment.

Industrial development in the Arctic is fairly new. Proper industries did not start to develop before the beginning of this century. Fishing, mining, and timber industry complexes have been built extensively since the 1920s and 1930s, and systematic exploration of

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Arctic oil and gas resources was started in the 1950s and 1960s.

The exploitation of Arctic natural resources has, however, concentrated on certain geographical areas. The most extensive development of the resources has been in the Soviet Union and Russia. There, special economic incentives have been used to boost Arctic activities. Industrial production has mostly been organized into large industrial complexes, which have produced mainly raw materials, fuels, and semi-finished products. Due to lack of pollution abatement measures, the Arctic industries have caused severe pollution and damage in their surroundings, both in Russia and elsewhere in the world. Most of the Arctic is, as we know, still close to its original, unspoiled state, and can be considered today as the largest unpolluted region of the world.

We know today that the Arctic has huge renewable and nonrenewable natural resources. The main resources are fish, forests, minerals, and different sources of energy. Energy resources include coal, peat, hydropower, and, especially, oil and gas. These resources form the basis for the future development of the Arctic regions, especially for the livelihood of the local economies of the Arctic provinces. Some of the reserves, especially minerals and oil and gas, are important also for the economies of the respective countries. In the long term, they may also make a significant contribution to world economics.

Fishery, forestry, and mining today form the economic backbone of many of the Arctic communities. For instance, the Kola Peninsula and northern Scandinavia contain more than seven hundred different commercial minerals, more than a quarter of all known minerals in the world. Russia produces 70 to 80 percent of its hydrocarbons from the Arctic reservoirs, and the unexploited gas reserves in the Yamal Peninsula and the Barents Sea are likely to double the known world reserves. These resources also form a potential for extensive energy supplies to Europe in the future. It is therefore evident that the Arctic nations and their Northern provinces will have an increasing interest in exploiting their own natural resources for the benefit of their people and communities.

Future development of Arctic natural resources will, however, depend on various geopolitical, political, economic, technological, environmental, and cultural issues. Commercial and industrial projects to be carried out in the Arctic have to pay attention to all of these aspects. I believe that the Nordic industries today are ready to consider these issues as a realistic basis for their own participation in Arctic projects.

A possible concept to be used in the exploitation of renewable Arctic resources is the concept of sustainable development. Although the concept has not yet been satisfactorily defined on a practical level, it has already been introduced to the activities of the Northern Forum, the Barents Euro-Arctic Council, and several other Arctic organizations. It has also been utilized in the planning and realization of a few concrete economic projects.

Application of the concept of sustainable development to the exploitation of nonrenewable natural resources is by far more problematic. As nonrenewable resources do not regenerate, the proper principles of sustainable development cannot be used. Therefore completely new principles and criteria need to be introduced in order to reconcile the different aspects of the development of renewable and nonrenewable resources. These criteria should be based on fundamental environmental, economic, and juridical considerations.

On the basis of my experience, I would like to introduce the following important aspects and principles to be considered as a starting point for the development of industrial projects and of renewable and nonrenewable natural resources in the Arctic.

1. *A long-term perspective.* The development of natural resources has to take into consideration the interests of future generations. Nonrenewable resources do not regenerate, and renewable resources of the Arctic have extremely long regeneration cycles. The production and depletion rates of the reserves should therefore be in an acceptable relation to the rate of regeneration or of discovering new reserves.

2. *A precautionary approach.* Resource development has to be based on a scientific knowledge of its impacts on local environments, on Arctic ecosystems, and on the socioeconomic conditions of the Arctic communities. A sufficient and rich knowledge base should be created by performing scientific research and by collecting and sharing the existing experiences and information on traditional and current activities in the Arctic.
 3. *Legitimate rights and responsibilities.* Clear principles and rules about how to carry out resource development and related industrial projects in the Arctic region should be found in the existing economic and environmental legislation. The laws should define equal rights and responsibilities for all project partners, and determine fair environmental liabilities for both investors and the authorities concerned.
 4. *True cost accounting.* All direct and indirect costs and benefits of resource development have to be taken into account in the evaluation of commercial projects and in the comparison with alternative activities. Special attention should be paid to anticipated world market prices and to long-term environmental costs of the projects.
 5. *Environmentally safe operations.* All individual projects and field activities in the Arctic have to be carried out at a required safety level. Good management practices, tested and proven technologies, and sufficient monitoring programs should be used for reducing environmental risks and avoiding possible damage in the vulnerable Arctic nature.
- Further development of economic and environmental legislation, especially harmonization of the existing laws, standards, and guidelines between Arctic countries and regions.
 - Development of environmental management capabilities and sustainable methods for the exploitation of forests, fish, and other renewable Arctic resources.
 - Development of new, environmentally sound technologies for the exploration, production, and transportation of minerals and hydrocarbons within the Arctic region, with special attention to waste treatment, management, and utilization.
 - Strengthening of local participation in Arctic projects both as partners and suppliers, and utilization of local experience and knowledge to carry out technological operations and solve environmental problems.
 - Preparation of investment programs for the development of infrastructure in the Arctic region and of the socioeconomic conditions of the Arctic communities.
 - Financing of the above activities from both domestic and international sources by combining the interests of private investors and of national and multilateral financing institutions.

A major challenge for the Arctic community today is to start the development and activities needed for supporting sustainable Arctic development on a practical level. Some of the basic needs and possible efforts are the following:

- Enlargement of scientific knowledge on the Arctic climate, geology, ecosystems, pollution, etc., by means of extensive joint research programs and sharing existing knowledge and experience between the Arctic nations and their institutions.

Financing of scientific research projects, technology programs, and large environmental projects is probably the most difficult issue in future Arctic development. Financing of industrial projects is difficult in many parts of the Arctic because of existing political and economic risks. Conditions for financing should therefore be improved by a better coordination in different Arctic countries of existing resources, policies, and activities at regional, national, and international levels. Another possibility for developing financing could be more extensive cooperation between environmental and commercial projects. For instance, priority in financing should be given to projects which make a significant contribution to the infrastructure and environment of the region.

In conclusion, I would like to make the following remarks. The Arctic has huge and versatile natural resources which are important for the Arctic countries and their Northern provinces, and in the long term for world economics. Resource development is likely to increase during the next decades. Commercial and industrial activities should be carried out in cooperation with local communities and organizations, and they should improve the living conditions of the inhabitants of the region. The concept of sustainable development provides a suitable basis for the exploitation of renewable natural resources in the Arctic. To reconcile with the development of non-renewable resources, completely new principles and criteria need to be introduced. Financing of necessary scientific research, technology development, and environmental projects is the most difficult issue to be solved in the future. Domestic and international, and public and private sources should be exploited to obtain sufficient financing for Arctic projects. In my opinion, this will require much more cooperation between governments and local groups working together with private industries.

Comments by Indigenous Peoples

Achieving Sustainable Development in the Arctic Region

Rosemarie Kuptana
President
Inuit Circumpolar Conference

From an Inuit perspective, sustainability is not simply conservation and protection, but it is using resources in a sustainable, balanced way to meet human needs. Inuit have practiced this for centuries, using our intimate knowledge of the environment and our own conservation values and practices to manage our resources effectively and protect them from over-exploitation.

Mr. Fenge's paper, "Toward Sustainable Development in the Circumpolar North," identifies two rather polarized views of the meaning of sustainability. One, which he describes as a mainstream anthropocentric

view—a view centred on man's interests—aims to maximize development through more efficient techniques. The other, which he describes as a biocentric view of sustainability—a view centred on the earth's interests—suggests the maintenance and restoration of ecological integrity as a primary aim. That is simply to paraphrase Mr. Fenge's discussion of this point.

As I have been asked to respond to Mr. Fenge's paper, I would say that the Inuit view of sustainable development does not strictly fall into either of these views. Inuit views of sustainable development give equal value to environmental integrity and the use of the earth's resources to meet human needs, and strive to find a balance and harmony between these two objectives.

In a 1994 publication entitled "Circumpolar Sustainable Development," the Inuit Circumpolar Conference articulated four interrelated themes of sustainability from an Inuit perspective that further illustrate this point. The four themes are resource management, culture and knowledge, local economies, and self-determination. With respect to resource management, sustainable utilization of the natural resources of the Arctic is the basis for Inuit economies, and sound management is required to protect the integrity of the Arctic ecosystem. Secondly, Inuit culture and knowledge must guide the development of Inuit economies. Thirdly, Inuit economic development must start at the local level, and local development will create expertise and ensure that the benefits of sustainability are shared by all communities. And, finally, to achieve these goals, Inuit must have the ability to determine their own future.

In summary, sustainable development, environmental protection, and Inuit self-determination are interlocking, interdependent goals that cannot be prioritized one against the other. Consequently, sustainable development is an integral part of Inuit self-determination, and self-determination is an integral part of the Inuit view of sustainable development.

With respect to the Arctic Environmental Protection Strategy and the Arctic Council as processes to

advance sustainable development, Indigenous peoples do not simply view themselves as stakeholders with rights of participation, but as distinct peoples with rights to self-determination. Further, as Indigenous peoples we have relied on and cared for the Arctic for thousands of years. Our future survival is dependent on the Arctic. We therefore perhaps have the greatest stake in the future of the Arctic and any policy and decision making affecting it.

Cooperation with other peoples and with the states in which we now find ourselves is important, but our cooperation will only be effective in ensuring sustainable development takes place to the extent governments reciprocate by acknowledging Indigenous expertise, acknowledging our rights as peoples, and incorporating Indigenous peoples' views of sustainable development as part of Arctic policy at the regional, national, and international level.



Sustainable Development in the Gwich'in Settlement Area

Fred E. Koe
Advisor
Gwich'in Tribal Council

In the past, the Gwich'in depended on the land and wildlife for their survival. The lives and culture of our ancestors revolved around their relationship with the land. They were hunters, fishermen, and craftsmen. There were strict cultural laws that were passed on from one generation to the next. Laws such as take only what you need, do not waste any part of an animal, have respect for wildlife and all living things. If these rules were not followed, hardships would fall on a hunter and his family. People would starve.

Our culture has evolved around the basic concept of sustainable use and development of the world around us. Taking care of the land, water, and wildlife has always been central to the culture of the Gwich'in.

That same concern exists today for the environment. We have seen what has happened to the environment in other parts of the world where big business, uncaring governments, and the people themselves have destroyed the land, poisoned the water, and killed almost every living thing. We did not want that to happen to our land or people. When negotiating our land claim, our number one priority was to ensure that the land, water, and wildlife were protected. We also demanded that our people, the true owners of the land, remain part of the process that protected and managed our land and resources in a comprehensive, integrated manner.

Throughout the land claim negotiations, our elders said over and over that the land and wildlife were the most important part of the claim, and we took this message to the negotiating table. We were successful, and today we are equal partners on comanagement boards that protect and manage land and wildlife in the Gwich'in Settlement Region. In our case, we were fortunate as the land and wildlife had not yet been destroyed. Today we are in a position to ensure that our land and resources will be here for future generations.

With the rights and power that we secured in our land claim agreement also came the responsibility to ensure that our use of the land, water, and wildlife were sustainable. We need to ensure that any development on our land will have minimum impact on the environment. In the Gwich'in Settlement Region, we have established the Gwich'in Land Use Planning Board, the Renewable Resource Board, and the Land and Water Board to ensure that development in the settlement region is sustainable. To ensure that the efforts of all the boards are coordinated, we are starting to develop a framework of integrated resource management and to train our own people to manage and direct the activities.

Sustainable development is getting a lot of attention from everyone today. Entire government agencies have been set up; there have been conferences held in every country; and rooms and rooms of reports have been prepared. Today, here we are again talking about sustainable development in the Arctic. Much of this

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work in the past has not involved Aboriginal groups, the first people to practice and live a life of sustainable development. I am glad we are finally making some progress and have the people who are closest to the land sitting at the table where decisions affecting our lands are made.

To the Gwich'in, sustainable development is a simple concept. It is something that our ancestors had to understand to survive on the land. We had to understand that our actions affected the land and wildlife, and that if it was necessary to take some fish from the lake or caribou from the mountains to survive, it was necessary to ensure there were fish left in the lake and caribou left on the mountains for future generations to survive. It also meant that we had to take care of the places that the fish and caribou lived, as they were important if the animals were to survive. Much of our culture and the stories of our elders are lessons in how to take care of the land and wildlife, how to practice sustainable use and development.

Caribou are an essential part of our livelihood and our culture, and in the past years the Gwich'in have been opposing oil development on the calving grounds of the Porcupine caribou herd. We opposed these developments in Alaska's Arctic National Wildlife Refuge or the "1002" lands because we do not believe that the caribou can survive if their calving grounds are destroyed. If this herd is impacted, so are we as a people. We would like to thank United States President Clinton for agreeing with us, and we are also asking for your help.

I would like to add that industrial development is not the only threat that we face. The Gwich'in, as do many Aboriginal and Northern people, still hunt and fish sustainably, but now use modern equipment and technology. We also trap furbearing animals. We need the income from this environmentally sustainable harvest to maintain our families, live in our communities, and keep our culture alive. However, there are people and groups who do not understand this. I am referring to the animal rights activists and some legislators in Europe who listen to them. They want to ban the import of furs caught in leghold traps, thereby destroying the market for Canadian furs and,

again, our livelihood. It is ironic that these animal rights activists could end up forcing our people to a much less sustainable way of life—on financial and social assistance. If you care about sustainable Northern development, we are also asking for your support on this issue.

In the past, the world was large enough that if we took care of our land it would in turn take care of us. However, today the world is a much smaller place, and what happens in one part of the earth affects the environment and lives of people in other parts of the world. Recent reports of industrial contaminants in Northern country foods and airborne pollutants known as "Arctic haze" have shown everyone that pollution from outside the Arctic has a direct effect on the people and wildlife in the Arctic. Today we all need to work together to ensure that the North is protected and that any development or use of resources is sustainable.

I am encouraged to see that people from all Arctic nations have come together and are working together to ensure that the Arctic environment is protected and that any development or use of that environment is sustainable. Having Aboriginal groups sit at the table as full participants is a good start, and hopefully future meetings will have Aboriginal groups from all Arctic nations. We have been observing for too long, and much of what we have seen has done little to protect the land and wildlife, little to ensure sustainable development. It is time for Aboriginal groups to take their place at the table as full participants and as managers of their land and resources. If we are to have sustainable development, the people dependent on the land and wildlife need to ensure that they are a part of the decision-making process for any development or use of those resources. We have long passed the time when we need to rely on others to speak for us and ensure that our interests are protected.

If we look at the animal world, we see that the mother grizzly bear will do anything she can to protect her cubs. The instinct to protect those cubs is so strong she will even put her own life at risk to protect them, her future generation. To the Gwich'in, the land and wildlife are our cubs, our future generation. To us

there are no compromises. If development and use of our land and resources is not sustainable, it is not an option and we will oppose it. To agree to development or use of our resources in a way that is not sustainable would contradict our culture and the way we see the world.

In conclusion, today as in the past, we are dependent on the land for our survival. What happens to the land and wildlife will happen to us. It may be possible to exist on store-bought food and never leave town to travel on the land, but the spirit in our heart and our cultural identity, which are essential to our survival, would die, and eventually so would we as a people.

If we are to achieve sustainable development we need to ensure three things:

1. That local Aboriginal people closest to the land and resources are involved as full participants in the decision-making process.
2. That informed decisions are made and that the time needed to make those decisions is allowed to ensure that development and use are sustainable. Everyone realizes that jobs and the economy are important to a healthy society, however, this needs to be balanced with the long-term importance and preservation of the land, wildlife, and people.
3. That everyone is committed to sustainable development—developers, governments, and local people. We cannot let ourselves be blinded by short-term economic gains. As we have seen in the past, companies and developers will come and go. Governments will change over time, but the people who depend on the land and resources are here for the long term. It is for us that sustainable development is most important. Without sustainable development we have no future.

The North is a special and beautiful place, and it is our home. The Gwich'in are proud that we can all work together to ensure there will be land and wildlife for future generations.

Statements

Canada Karen Kraft Sloan

We are all in agreement that the Arctic is a special place for all Canadians. Whether we are from the south or the north, we recognize the need to act swiftly to ensure that our policies and actions support the needs of this fragile land and respect the rights of all the peoples who live here.

The term sustainable development, or sustainability, is a generative concept that results in different understandings by different people. At the political level, governments have accepted the Brundtland definition as a working definition of sustainable development. Even though this is the accepted definition, there are still many approaches to its implementation.

As Canadian parliamentarians, we believe that the goal of integrating ecological, economic, and equity concerns in decision making in the Arctic, as well as other areas of the globe, is necessary and should be used as a guide to live within the region's carrying capacity and assimilative capacities.

The Brundtland definition of sustainable development, being "development that meets the needs of the present without compromising the ability of future generations to meet their own needs," acknowledges the wisdom of Aboriginal peoples' concern for environmental sustainability for the next seven generations.

Canadian parliamentarians agree that we must work toward a common vision of sustainability of the Arctic in a way that

- ensures the integrity of the Arctic ecosystem so that the health of all living organisms is maintained;

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- ensures its people are able to undertake meaningful work and sustainable livelihoods;
- promotes equity through social, political, economic, and spiritual relationships for individuals, for peoples, for nations, for generations, for men and women, and for all of earth's species;
- maintains the Arctic's rich cultural forms of expression;
- acknowledges the values and richness of the Northern culture and remembers the Arctic's social and natural history as told by the elders of the First Peoples and its newer history written in these past few decades;
- integrates those aspects of traditional ecological knowledge and modern science research that allow for informed decision making.
- that we continue to develop the political will to address sustainable development in collective fora such as the Arctic Environmental Protection Strategy and the proposed Arctic Council;
- the development of economic opportunities in the Arctic that preserve the ecosystem and reflect the vision of sustainable development. Comanagement regimes in Canada's Arctic have been effective in supporting these ends—specific economic opportunities include ecotourism and art;
- the support of sustainable community economic development that meets the needs of the people through educational programs, capacity building, and a diversified economy;
- that the vision of sustainable development and environmental stewardship be incorporated into all levels of governmental decision making;

Therefore we recommend

- strongly, that the Arctic Council be established without delay;
- that an effective environmental assessment process inclusive of Indigenous peoples is crucial, incorporating not only the specific project assessments, but also taking into consideration the cumulative effects of all development and activities within the region, for example, with a nonrenewable resource extraction project such as diamond mining;
- that when considering the impacts of development, special consideration be given to the role women play in maintaining the social and cultural fabric of their families and communities;
- that the continuity and level of Arctic research be maintained on a shared and cooperative basis by all circumpolar nations;
- that we continue to support the Canadian policy for the protection of the calving grounds of the Porcupine caribou herd on the coastal plain of the Alaska National Wildlife Refuge in Alaska;
- that Aboriginal self-determination and sustainable development be linked, and that there be continued support for the process of land claim settlement and comanagement regimes;
- that the development of natural resources in the Arctic take into consideration future generations;
- that resource development be based on sufficient scientific knowledge through the integration of ecological and traditional knowledge of the impacts on the local and regional environments and the socioeconomic conditions of Arctic communities.



Denmark/Greenland Hans-Pavia Rosing

We have been listening closely and with interest to the presentations made this morning, especially to the presentations by Rosemarie Kuptana, the president of the Inuit Circumpolar Conference, and Mr. Fred Koe. We can, I think, identify very much with the statements made by the two speakers for the situation

in Greenland. We are, of course, very much in favour of sustainable development and have stated this viewpoint in many different areas. We have stated this viewpoint at many different meetings—international meetings—and we have stated this viewpoint at the UN meetings. There is no doubt that there is an agreement between Denmark and Greenland and the parliaments and the governments of the two countries on the importance of sustainable development for Greenland.

Speaking about sustainable development, we have also agreed that the viewpoints of the people living in the Arctic are very important. No development of the Arctic can be and must not be fulfilled without active participation by the Inuit and the people living in the Arctic. Therefore, there has been political development in the Arctic, in Greenland, in Canada, and in Alaska, to obtain more strength for the native people of the Arctic.

As for Greenland, as you will know, we have our home rule situation. We have agreed with Denmark to have a home rule government and a home rule parliament in Greenland, and we have the political responsibility for most areas in terms of development of renewable and nonrenewable resources.

There is a delicate balance to be watched with any development in the Arctic, specifically, with nonrenewable development. In Greenland, we are now in the process of encouraging development of nonrenewable resources. It is inevitable that without any economy, without any economic development, it is very difficult for the small peoples of the Arctic to have political development because in today's world economic resources are the basis of development.

Of course, the cultural part of it, which was mentioned by the two previous speakers, is also very important.

As I said before, we are urging cooperation throughout the Arctic on these important issues. We have, for years, had cooperation between the Inuit of the Arctic through the Inuit Circumpolar Conference. As a participant in these meetings within the Inuit Circumpolar Conference, a lot of words have been

said during the years. The words that have been said during this session this morning have been repeatedly said within the framework of the ICC. The Inuit position, I think, is well known to all the delegates to this conference.

I would like to say that the most important thing is that we have cooperation between governments of the Arctic nations, between the parliaments. But the most important part of it is that there is cooperation between the inhabitants, between the peoples of the Arctic, and that they have direct access to this cooperation that we are trying to form through the Arctic Council.



Finland **Hannes Manninen**

It is very easy for everybody to accept the "core" principles of sustainable development on a general level, but in practice, the principles are very often in contradiction to each other. Therefore, a precautionary approach is very important.

At all events, in the Arctic area there are lots of natural resources, which are necessary to use in a long-term perspective. It is necessary for the economy of the Arctic countries and for the benefit of the residents of the Arctic area.

We also know that the situation is not the same in different parts of the Arctic area, but now I speak first of all of the Barents region, because it is the nearest and the best known for us in Finland.

Dr. Jumppanen told us of the enormous natural resources in the Kola Peninsula. Those are necessary to build the economy in the future, but what can we do immediately which is not against sustainable development?

We must increase our efforts to gather scientific knowledge of the Arctic circumstances, exchange our experiences, strengthen local participation, and so on. All these take a lot of time.

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I think that it is very important to build and renew infrastructures. It would also benefit the residents in the Barents region to change our thinking from north-south to west-east. It means that we would also build good transboundary connections: roads, railways, and telecommunications. This is at the same time the best way to promote equality and prepare for the future.

We will have a lot of work and many difficulties in achieving sustainable development, but it is also an enormous challenge. With cooperation, we must realize it.



Iceland **Rannveig Guðmundsdóttir**

Our road to a sustainable future is an important one, and we are trying to answer questions about what it means and how and where we will go. It might be harder than we expect for politicians to come through with the right answers and decisions.

The people in the countries in the Arctic region have been through cultural and economic development in the past and through enormous changes in lifestyle. In every country where there is discussion on sustainable development in our environment, the question is raised: What does it mean for us?

In Iceland, we consider this a matter of utmost importance, and for us it is highly connected to sustainability in the sea. Fishing is our fundamental resource, and we sometimes say "life is fish."

Another important resource from the ground is energy, that is from our waterfalls. We do not have forests and minerals in our country.

In the Arctic region, people have always respected their resources, and they knew intuitively how to preserve them because in the past they were the fundamentals of life. For them sustainability meant life itself.

Dr. Pauli Jumpsanen said that future development of Arctic natural resources will depend on various geopolitical, political, economic, technological, environmental, and cultural issues. I agree with that. In my country, we say that highly educated people are nowadays a nation's biggest resource. I believe these are linked together.

In Iceland, we consider development in the ocean as a great matter for our future, as in the Arctic region as well. The fishing stocks are still our main resource. Every citizen in my country understands that fishing is important. Both on a national basis and in international cooperation, we do research to acquire knowledge for better environmental management. We depend on our fishing stocks and how they will develop in the future.

What is sustainable resource use when it comes to political decisions? Where do the ideas of prevention, precaution, protection, and natural use meet? We all seek the answer to those important questions. Most people agree on the danger from pollution, the danger from nuclear accidents, and on the importance of environmental protection. But when it comes to the natural use of resources in our nearest neighbourhood, we find different answers and meanings.

I dare say that we Icelandic people have great expectations for the results of this conference. I believe that the cooperation of parliamentarians of the Arctic region is meaningful for good results, and I agree with Birgitta Dahl, who said this morning that the responsible way of planning our development is a matter of justice.



Norway **Lars Gunnar Lie**

In my statement I will focus on the sustainable management of renewable resources in the Arctic.

The fisheries sector is of fundamental importance in securing global food security, and with a continuously

growing population, it is expected that the demand for fish and fish products will increase faster than the supply in the years to come. This means that policies and decisions to promote sustainable development of renewable resources, as fish, will have to respond to external pressures.

We are now beginning to understand how activities outside the Arctic region affect the Arctic ecosystem. The North is part of a global ecosystem, and global issues require global actions. A key element in a policy of rational and sustainable management of fish resources is the protection of juvenile fish and the outtake of adults, that is, the "fishable part of the stock." Taking into account the biology of these Northern waters and the need for efficient implementation of measures, the present management system based on fish size, mesh size, and by-catch regulation also needs additional instruments to meet the requirement to change fishing grounds, ban discards, and close and open sensitive areas.

Like other Arctic countries, Norway is dependent upon the fish resources, and prudent management is necessary to safeguard the future of our fishing industry. In order to prevent overfishing and stock depletion, we must call for strengthened management measures in both national as well as international waters. The UN Agreement on Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks breaks new ground in international law and offers the necessary tools to ensure adequate protection of these stocks. Clear principles and rules in international as well as national legislation are of utmost importance.

I think ecological knowledge is a key to planning sustainability. And I also believe that Indigenous peoples and their communities have a vital role in environmental management and development because of their knowledge and traditional practices. It is essential to respect the principles of sustainable development and the preservation of biological diversity in the Arctic region when the need for further utilization is increasing.

In conclusion, I would underline the importance and value of all the renewable resources in the Arctic and

the need for international Arctic cooperation in creating a concept of sustainable development.



Russia Alexander Kozyrev

In the Russian delegation, I represent the Committee on International Affairs of the dumas. I am the deputy chairman of that committee and the chairman of a subcommittee on external economics, science, and technology, as well as environmental cooperation.

In my delegation I also represent the Liberal Democratic Party of Russia. Our party and our faction in the government are for Northern development because in Russia some people believe it is important to put an end to economic and industrial activity and, in fact, any kind of activity in our huge expanses up north. The North and nearby regions cover approximately two-thirds of the territory of Russia, including regions where we have permafrost.

As you can understand, closure of industrial enterprises—and it is a very big part of our economy—would lead to very serious consequences for our country. Sustainable development—as we call it, balanced development—is natural. It gives nature a chance to renew itself, and that is a very important approach.

I was just recently up north where there is diamond mining in the northern part of Yakutia. There, large trucks and dump trucks of 150 tonnes are used by major excavators to carry soil. They have been made in the United States and in Japan, and they do great damage to the environment in that region. We support a decrease in the technological effect upon nature because only then can we continue to develop those regions while preserving their industrial potential for future generations.

We support the preservation of the Russian marine and military presence in the north of Russia because they have been there for more than two hundred years. The navy has been present in those regions. In that

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respect, we have a major problem with the use of nuclear-powered submarines. We know that Canada has facilitated, to a certain degree, some financing to resolve this problem, but Russia is the one who must take on the main burden of this.

There was a project for making use of these submarines as underwater tankers. We have been doing research for ten years now involving the head of our delegation, among others, and we have accumulated major experience in this sphere, apart from funding problems in Russia. The international legal aspect is also very important. We know that many countries, including Arctic countries, have legislation that prevents any nuclear-powered vessels from entering their ports. But those countries must understand that the situation that has come to be where these boats are not being used very much, therefore the nuclear unit has degraded and become dangerous. It would be much better to use them for efficient transportation of petroleum products and oil in the North. I think this could be very economical for other countries, not just for Russia, because it makes it possible to provide fuel any time of the year, through the North Pole route and under the ice.



Sweden

Maggi Mikaelsson

The Arctic region, as well as the rest of the world, is under ecological threat. This is also a threat to the world economy in the long term. The climate change, the ozone hole, and the decreasing harvest of fish in the world seas are examples of this. Most people are also convinced that this is due to human activities. Previous meetings and conferences have stressed the need for action to obtain sustainable development in the Arctic region.

The Rovaniemi, the Nuuk, and the Horsholm declarations all reaffirm the commitment to protect the Arctic environment and to promote cooperation with the Arctic Indigenous people.

The goal is common and this is a step forward. All progress has to start with agreement. But a

declaration is only words. There must also be agreement on the definition and on the meaning of the words and agreement on how to act to reach the common goals. This is much more difficult because then you have to reach up to and solve the conflicts that exist under the surface of the agreed documents.

From my point of view, I can see two tendencies in development. On the one hand, governments and parliaments in the world succeed in defining common goals. On the other hand, politicians are losing contact with the people. At least this is the situation in western Europe, where the gap between elected and electors is widening.

In order to increase democratic legitimacy and to take real steps forward towards sustainable development there is a need to connect words with actions and to connect parliaments with the people.

I will take one example to show this. I think that we all accept the Brundtland Commission's definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." I also think that we can accept the underlying principles in the prepared paper for this theme, one of which says that sustainable development is "efficient use of natural, manufactured, and social capital."

But do we all agree on what we mean by efficient use of natural capital? I am sure we do not.

I mentioned the fish harvest in the beginning. It is a fact that in spite of, or maybe due to, more efficient equipment, and more and larger vessels, the fish harvest on a worldwide basis does not grow. This indicates a threat to the resource itself.

How does this affect people in the Arctic region whose income depends on fishing? And what are the conclusions to draw from this? There will be different answers to these questions.

One urgent task for the people and the politicians in the Arctic region is to find a common definition and a common action on how to reach a sustainable fish harvest. There is obviously a conflict, but we must not

avoid the difficult issues. We have to accept them and find common solutions.

An Arctic Council can play an important role in solving a conflict like this. An Arctic Council could also be a forum for contact between people and parliamentarians in the Arctic region. An Arctic Council would also be one natural forum to start the discussion on an Arctic convention. A convention for the Arctic region is much more complex and difficult to reach than was the Antarctic Convention, but in my opinion it is even more necessary.

A convention for the Arctic region which combines the ecological as well as the social and economic needs of people and the environment, and connects the countries of the North in a common effort to obtain sustainable development would be a most important contribution to a new world order—a world order containing a lifestyle that follows more closely the guidelines of the Indigenous peoples, who have proven their ability to maintain a more sustainable way of living than many of us have done.

Theme II:

Environmental Contaminants in the Arctic

Background Paper

Environmental Contaminants in the Arctic

Hajo Versteeg
Environmental Law and Policy Advisor

EXECUTIVE SUMMARY

- Over the past fifty years, the Arctic ecosystem has been subjected to increasing inputs of environmental contaminants, including persistent organic pollutants, heavy metals, radionuclides, acid deposition, and petroleum hydrocarbon pollutants. These substances have been detected throughout the entire Arctic ecosystem, and some have contaminated every level of the food chain, from plankton to humans.
- Many of these contaminants have the potential to cause serious and irreversible harm to human health and the environment.
- Most of these contaminants originate from human (anthropogenic) activity in industrialized and agricultural regions far removed from the Arctic.
- Because of its lower temperatures, reduced sunlight, and low species diversity, the Arctic ecosystem is particularly sensitive to environmental contamination.
- Because of their lifestyles, indigenous Arctic peoples are uniquely vulnerable to many environmental contaminants. Many Indigenous peoples now carry unacceptably high body burdens

of certain environmental contaminants. For example, the milk of certain populations of Canadian Arctic women contains among the highest levels of PCBs in the world, as well as considerably higher levels of DDE, HCB, mirex, dieldrin, heptachlor epoxide, and trans-chlordane than women in southern Canada.

- Current national, regional, and international legal instruments are generally not adequate to ensure the continued protection of the fragile Arctic ecosystem, including its peoples, from environmental contaminants.
- Because contaminants reach the Arctic from sources around the world, the solutions must take on global dimensions. However, to be effective, toxics management strategies must incorporate the differing social, economic, geographic, cultural, and political factors throughout the world that influence the generation, use, and release of these substances. In particular, developed countries must recognize that many developing countries do not have adequate human and financial resources, institutional infrastructures (analytical laboratories, field research, regulatory agencies, and law enforcement), technical capacity, or access to rapidly evolving information to effectively manage toxic substances. Equally, developed countries must recognize and address their role in promoting the use of polluting products and technologies in developing countries that have local, regional, and international effects.
- The eight circumpolar nations can play a vital leadership role in promoting national, regional, and international initiatives, including international agreements, that recognize and address differing social, economic, cultural, and political factors throughout the world that influence the generation,

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use, and release of polluting activities and products that end up in the Arctic ecosystem.

- The concept of pollution prevention should be promoted as the cornerstone of national, regional, and international strategies for managing environmental contaminants. Pollution prevention is defined as any activity that avoids, reduces, or eliminates the use of toxic substances, or that avoids, reduces, or eliminates the creation of pollution, without shifting or creating new risks to communities, workers, consumers, or the environment.

1.0 INTRODUCTION

All species have an effect on the environment in which they live. However, the power of the human species to disrupt the local and global environment has grown exponentially over the past few centuries, and particularly since 1945. Environmental stress caused by human activity is such that today all species on the planet, including humans, are under threat. The increasing contamination of air, water, and land through the release of chemical substances such as persistent organic pollutants, heavy metals, and radionuclides remains one of the more serious assaults on the global environment.

The Arctic ecosystem is shared by the eight circumpolar nations of Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden, and the United States. Although once considered pristine because of its remoteness and relatively small population, over the past fifty years the Arctic ecosystem has been subjected to increasing inputs of toxic contaminants. These substances have been detected throughout the entire Arctic ecosystem, in air, soil, sediment, snow, ice, water, terrestrial organisms, and marine and freshwater species. They have contaminated every level of the Arctic food chain, from plankton to humans.

In the last twenty years, scientists have detected, among other contaminants, the following:

- persistent organic pollutants (POPs), including pesticides such as chlordane, toxaphene,

hexachlorobenzene, and DDT; chlorinated industrial products or by-products such as PCBs, dioxins, and furans; and polynuclear aromatic hydrocarbons;

- toxic heavy metals, such as cadmium, lead, and mercury;
- radionuclides;
- acid deposition and Arctic haze; and
- petroleum hydrocarbon pollutants (PHPs).

The discovery and continual verification of these environmental contaminants in the Arctic are cause for immediate and serious concern for five reasons. First, all of these contaminants have the potential to cause significant, and often irreversible, harm to human health and the environment. Second, most of these contaminants are of anthropogenic origin, emanating from industrial and agricultural regions far removed from the Arctic. Long-range transport of contaminants from around the world is increasingly being viewed as the most significant threat to the environmental quality of the Arctic. Third, the Arctic ecosystem and its Indigenous peoples are uniquely vulnerable to environmental contamination. Fourth, once dispersed into the Arctic environment, cleanup or recovery is often not possible. Fifth, the effective management (including the reduction or elimination) of many of the environmental contaminants found in the Arctic is complex, polarized, and often political.

The fact that many contaminants reach the Arctic from sources around the world means that the solutions, by definition, must take on global dimensions that involve global collaboration. This in turn has profound implications. The social, economic, political, and legal considerations that significantly influence the generation, use, release, and, ultimately, the management of environmental contaminants vary greatly in different regions of the world. Factors such as infrastructure, institutional capability, information availability, technology development, and financial costs associated with control measures are important determinants that vary around the world. These factors are often interrelated and interdependent and

are influenced by other considerations, such as culture, local geographic conditions, and societal values. Effective global management strategies require a clear appreciation of these realities and, in particular, the enormous challenges faced by developing countries and countries with economies in transition whose efforts to control toxic chemicals are seriously constrained by limited human, technical, scientific, and financial resources. These constraints are compounded by the fact that many chemical technologies and products that are sold by industrialized nations to developing countries are comparatively cheap but pollution-intensive.

The second part of this paper provides a brief overview of five groups of environmental contaminants that are currently considered to be of priority concern in the Arctic. It also includes a brief analysis of existing regulatory approaches to the management of these chemicals. All of this information has been extensively documented in peer-reviewed scientific and legal treatises and journals. Several of these documents are referenced in the bibliography. The Arctic is also potentially vulnerable to two other significant impacts resulting from human activities: those relating to global climate change and those relating to erosion of the stratospheric ozone layer. However, these impacts have not been addressed in this paper.

The third part of this paper provides a generic overview of the evolution of strategies that have been used in attempts to manage environmental contaminants. Its purpose is to provide a conceptual framework which conference delegates may consider when assessing the merits of various strategies and actions that are needed if the sensitive Arctic ecosystem is to be preserved. This part concludes that an effective strategy for protecting the Arctic ecosystem, including its Indigenous peoples, must focus on pollution prevention, must be global in scope, and must address the regional differences in social, economic, cultural, and political factors which influence the human activities that create and release pollutants into the environment.

2.0 ENVIRONMENTAL CONTAMINANTS OF CONCERN TO THE ARCTIC ENVIRONMENT

2.1 Persistent Organic Pollutants

2.1.1 *The Nature of the Problem*

Persistent organic pollutants (POPs) are organic compounds that

- have long half-lives in the environment and undergo slow physical, chemical, and biological degradation;
- are typically semivolatile, enabling them to travel great distances on a global scale, primarily through the atmosphere, but also through freshwater and ocean currents; and
- are lipophilic, which, together with their persistence, allows them to bioaccumulate in the tissues of living organisms, biomagnify through the food chain, and reach significant concentrations in upper trophic level species, including humans.

Greater incidences of immune system dysfunction, reproductive deficits, developmental abnormalities (including neuro-behavioral impairment), as well as cancer have been recorded in humans accidentally or chronically exposed to high levels of certain POPs. Scientific studies have also demonstrated that a number of wildlife populations exposed to high levels of POPs are experiencing disorders similar to those observed in controlled laboratory exposure experiments. In humans and wildlife, the developing fetus and newborns are particularly vulnerable to the effects of these substances.

Numerous studies have confirmed that POPs such as chlordane, toxaphene, hexachlorobenzene, DDT, PCBs, dioxins, furans, and PAHs continue to enter the Arctic ecosystem. Most of the major POP contaminants detected in the Arctic ecosystem have no significant local sources, and, with the exception of PCBs, have in general never been used, generated, or

manufactured in the region. POPs are almost exclusively released into the environment from anthropogenic sources, including agricultural pest control, disease vector control, waste disposal, leaks and spills, and combustion of fuels and wastes. POPs reach the Arctic from all parts of the globe, although sources in the Northern Hemisphere probably predominate. The atmosphere is the most significant transportation vector for contaminant loading to the Arctic, but inputs from rivers and ocean currents are other modes of transportation. The ocean functions mainly as a storage reservoir. Many of the POPs contaminating the Arctic are now banned or severely restricted in developed countries.

2.1.2 Some Approaches to Managing POPs

2.1.2.1 National Initiatives in Developed and Developing Countries—Most industrialized states have domestic legislation that can regulate all aspects of POPs, including imports and exports, manufacture, storage, transportation, use, and disposal. Many of these countries also have worker, bystander, and consumer health and safety laws that are designed to minimize the dangers to human health and the environment from exposure to toxic chemicals, including POPs. Many industrialized states have banned or severely restricted the *domestic* use of many intentionally manufactured POPs, and have regulated products and processes that produce POPs as unwanted by-products in order to eliminate or reduce their release into the environment. Moreover, most developed nations have adequate institutional capabilities and human and financial resources that enable them to assess, monitor, and enforce their chemical laws and policies. Nevertheless, there is near universal recognition that these states must continue to strengthen their control systems to further reduce the continuing negative impacts of toxic chemicals, including POPs, both within and beyond their national boundaries.

Many developing countries and countries with economies in transition do not have the necessary legislative framework and/or administrative infrastructure needed to manage toxic chemicals adequately. While progress to remedy this situation has been real, there remains the recognition that both regulatory and infrastructure development are critical

in these countries. Human and financial resources, institutional arrangements (including analytical laboratories, field research, regulatory agencies, and law enforcement), technical capability, and access to rapidly evolving information on toxic chemicals, including POPs, are not readily available in most developing countries. As such, these countries often have difficulty in managing their own, or international, laws regulating POPs, including bans, phaseouts, and severe restrictions. These difficulties are compounded by the fact that, in many cases, the chemical technologies and products exported by industrialized nations to developing countries tend to be comparatively inexpensive but pollution-intensive. For example, a significant proportion of the pesticides exported to developing countries are POPs that are legally banned or severely restricted in many parts of the developed world because of human or environmental health concerns. Often these products are the cheaper, off-patent chemicals that have relatively simple chemistries and are easy to manufacture and formulate. It is for these reasons that an effective management strategy for the reduction and/or elimination of POPs in the global environment (including the Arctic) must recognize and address the underlying social, economic, and political factors that contribute to the demand for the production and use of POPs in different regions in the world.

2.1.2.2 International Initiatives—Most international toxics policy instruments address issues related to health and environmental risk assessment, communication of information, informed consent of the parties involved in the trade of banned or severely restricted substances, safe international transportation, and worker safety. Many of the instruments dealing with hazardous chemicals are nonbinding, though this is changing. Currently, there is no comprehensive international law or agreement regulating all aspects of the manufacture, use, sale, trade, transportation, and disposal of POPs. The two most frequently noted instruments governing the use and distribution of toxic chemicals are the FAO International Code of Conduct on the Distribution and Use of Pesticides and the UNEP London Guidelines for the Exchange of Information on Chemicals in International Trade. These two *voluntary* initiatives include provisions calling for the establishment of national regulatory requirements and enforcement mechanisms for the

management of toxic chemicals, including pesticides, where they do not exist, the exchange of information between states through designated national authorities, and the provision of advice and assistance with respect to proper chemical management. Both of these instruments include a procedure to assure the prior informed consent (PIC) of states importing chemicals whose use or manufacture has been severely restricted or banned by exporting states.

Regulation of the movement of hazardous wastes including or containing POPs is covered by the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Existing global air quality agreements have only limited relevance to the POPs issue. The international control of water pollution from point and nonpoint sources is largely based on regional agreements. Several of these agreements are relevant to POPs management. For example, the 1992 Convention for the Protection of the Marine Environment of the Northeast Atlantic seeks to protect, among other things, this part of the Atlantic Ocean from land-based sources of marine pollution, including airborne pollutants. PCBs and certain organo-halogen compounds are specifically covered by this agreement. Similarly, parties to the North Sea Declaration have specified 1995 as the target for a 50-percent reduction compared with 1985 levels of some POPs, including dioxins, PCBs, and HCBs. Parties to the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea (1992) have also made commitments to cut, by 1995, 50 percent of their 1987 emissions of certain POPs, including PAHs, dioxins, HCBs, and PCBs.

The most extensive regional convention on air pollution is the Geneva Convention on Long-range Transboundary Air Pollution (LRTAP), adopted in 1979. The convention, which originated as a response to concerns related to acidification, entered into force in 1983 and, to date, has been ratified by thirty-nine parties. It provides a framework within which the contracting parties identify the problems posed by transboundary air pollution and accept their responsibility to undertake appropriate abatement action. The framework of general principles outlined in the convention are given concrete effect through the

adoption of protocols. By 1994, protocols on nitrogen oxides, volatile organics, and sulphur had been negotiated. In November 1995, the Executive Body to the LRTAP Convention agreed to authorize the initiation of negotiations of a POP protocol based on a series of reports substantiating the need for this action. A drafting workshop has been scheduled for May 1996, at which time optional texts for a POP protocol will be prepared for negotiation by the appropriate LRTAP Convention working groups. While the LRTAP Convention encompasses a very large proportion of the heavily industrialized and agriculturalized Northern Hemisphere (including the United States, Canada, Europe, and all of the former Soviet Union), it seems clear that complementary global actions must occur since POPs circulate globally.

In June 1995, Canada and the Republic of the Philippines hosted an international meeting on POPs. More than 125 experts with a wide range of backgrounds from more than forty countries participated. Among other things, the experts all agreed that there was sufficient knowledge concerning the detrimental environmental and human health effects associated with POPs to warrant immediate national, regional, and global action, including bans and phaseouts for certain POPs. The experts agreed that domestic regulatory initiatives alone would not be effective in managing the adverse global impacts of POPs, and that, in any event, domestic regulatory arrangements in many countries could not adequately control POP releases to the environment. Moreover, the experts agreed that current international laws and agreements do not provide for effective global POP management.

In May 1995, the Governing Council of the United Nations Environment Programme agreed to address the management of POPs on a global level. This directive, in conjunction with the Washington Intergovernmental Meeting on Marine Pollution, held in November 1995, requested the Intergovernmental Forum on Chemical Safety (IFCS) to develop recommendations for international action. These recommendations are to be considered by the UNEP Governing Council and the World Health Organization Assembly in 1997. At the Washington

meeting, the Nordic countries submitted for discussion an action plan to reduce and eliminate releases of POPs to the marine environment. At the end of this meeting, the delegates agreed, in a formal declaration, to develop a global, legally binding instrument for the reduction and/or elimination of emissions, discharges and, where appropriate, the elimination of the manufacture and use of certain POPs. In March 1996, the IFCS working group on POPs agreed to sponsor an international experts meeting in Manitoba in June 1996 on socioeconomic factors influencing global action on POPs. The experts meeting will be immediately followed by an open session of the IFCS working group, which will prepare recommendations for international action for UNEP and the World Health Organization Assembly.

In 1991, the environment ministers of the eight Arctic countries signed the Declaration of Protection of the Arctic Environment, thereby endorsing the Arctic Environmental Protection Strategy (AEPS). The AEPS is a plan for regional cooperation among the circumpolar countries to provide for the protection, enhancement, and restoration of the Arctic environment and the sustainable utilization of natural resources. The AEPS specifically recognizes the unique relationship of Indigenous peoples to their Arctic homeland. One of the objectives of the strategy is "to recognize and to the extent possible, seek to accommodate the traditional and cultural needs, values and practices of the Indigenous Peoples." In 1993 the eight ministers expanded their commitments by signing a second document, the Nuuk Declaration on Environment and Development in the Arctic. Among other things, the Nuuk Declaration states that the objectives on POPs are to support the development of appropriate protocols under the LRTAP auspices and to consult with non-ECE nations whose emissions and discharges of POPs may contribute to the environmental inventory of POPs in the Arctic. It was this commitment which led to the Vancouver 1995 meeting noted above, hosted by Canada and the Republic of the Philippines. One of the AEPS working groups is the Arctic Monitoring and Assessment Program (AMAP). AMAP is responsible for gathering detailed scientific data on levels and effects of pollutants in all components of the Arctic ecosystem. Priority attention in AMAP has

been given to POPs, heavy metals, radionuclides, and acidification. AMAP will complete a comprehensive State of the Arctic Environment Report for the eight environment ministers in early 1997.

In summary, domestic laws, particularly in developing countries and countries with economies in transition, and international laws do not adequately protect the Arctic from POPs released throughout the world. However, there are several international initiatives that have excellent potential for preventing POP contamination of the global environment, including the Arctic. The eight circumpolar nations can play a vital leadership role, domestically, regionally, and internationally in promoting pollution prevention strategies that address socioeconomic realities throughout the world in order to preserve the Arctic ecosystem.

2.2 Heavy Metals

2.2.1 *The Nature of the Problem*

Studies conducted under AMAP and in other national and international fora confirm that the Arctic ecosystem is subject to contamination by heavy metals. The heavy metals of greatest concern in the Arctic are mercury, lead, and cadmium. The presence of heavy metals in the Arctic is a result of natural processes and anthropogenic activities. However, it is very difficult to distinguish the relative contributions of anthropogenic to natural sources. The anthropogenic contribution of heavy metals occurring in the Arctic is derived from both long-range transport (primarily via the atmosphere) and from local discharges and emissions, particularly from the heavily industrialized Kola Peninsula in Russia and from mining sites within the Arctic. Rivers may locally be a significant entry route for contaminant metals into the nearshore Arctic Ocean. Atmospheric contamination of lead derives predominantly from eastern Europe and Russia. For mercury (which can biomagnify in the food chain), some of the predominant anthropogenic sources include the burning of coal, the mining and extraction of mercury, the smelting of other metals, chlor-alkali plants, and municipal waste incineration. Most variations in heavy metal burdens in Arctic biota appear to be

related to local geology, although studies indicate that some heavy metals have increased in concentration in the Arctic, indicating an anthropogenic contribution.

In certain forms and in sufficient concentrations, heavy metals are toxic to living organisms. Natural environmental levels of these metals are generally below the threshold at which biological damage is expected to occur, but human activities have increased the possibility of exposure to harmful concentrations in some industrial and urban areas of the world.

The impacts on human health associated with high body burdens of lead and mercury are well documented and supported by epidemiological studies. The formation of methylmercury when land floods behind Arctic and sub-Arctic hydro dams is a particular concern, since it can lead to bioaccumulation of this metal in the Arctic food chain, and ultimately may enter the diet of local people. Cadmium is of concern because some species, such as caribou and narwhal, are particularly prone to accumulating cadmium in certain organs, such as kidney and liver.

Numerous studies have investigated the concentrations of mercury, lead, and cadmium in Arctic animals, primarily to evaluate the dietary intake by Indigenous peoples. Certain tissues and organs of a number of Arctic species have been reported to contain mercury and cadmium concentrations that exceed human consumption guidelines. However, studies have not yet indicated any human health effects in the Arctic which can be attributed to this dietary intake. In most cases, the observed elevated levels appear to be due mainly to natural sources.

2.2.2 Some Approaches to Managing Heavy Metals

Most of the general commentary on the national and international regulatory initiatives pertaining to POPs (see section 2.1.2 above) would also apply to heavy metals. Chapter 17 of Agenda 21, on the protection of the oceans and seas, calls for the integrated management of coastal and sea zones, and their protection from land-based pollution sources. In detailing the basis for action, Agenda 21 states that contaminants that pose the greatest threat to the

marine environment include synthetic organic compounds, metals, radionuclides, oil/hydrocarbons, and PAHs. Chapter 19 calls for the environmentally sound management of toxic chemicals, including the phasing out or banning of toxic chemicals that pose an unreasonable or otherwise unmanageable risk to the environment or human health, and those that are toxic, persistent, and bioaccumulative and whose use cannot be adequately controlled. Certainly, this general directive applies to many of the environmental contaminants found in the Arctic ecosystem.

Regulation of the movement of hazardous wastes, including several heavy metals, is covered by the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Voluntary, prior-informed consent procedures outlined in the London Guidelines and the FAO Code of Conduct also apply to several heavy metals. For example, a Decision Guidance Document has been developed for mercury compounds which provides prospective importing countries with information needed to assist them in making a decision to allow or prohibit future imports of the chemical. Many countries have taken domestic actions to ban or severely restrict the use of mercury compounds. For example, as of 1991, twenty-two countries have banned or severely restricted the use of mercury-containing pesticides. The 1992 Convention for the Protection of the Marine Environment of the Northeast Atlantic, the North Sea Declaration, and the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea also contain provisions and measures for reduction of heavy metal discharges and emission from countries which are party to the convention.

In November 1995, the Executive Body to the LRTAP Convention considered the report of its preparatory working group on heavy metals. The working group concluded that the state of substantiation for cadmium, mercury, and lead is sufficient to support the development of a protocol for the UN ECE region, and recommended that formal negotiations for a heavy metal protocol (to initially focus on mercury, lead, and cadmium) be commenced under the LRTAP Convention. The Executive Body agreed with these conclusions and recommendations

and authorized the initiation of negotiations of a heavy metal protocol. A drafting workshop will be held in Germany in May 1996, at which time it is anticipated that optional texts will be prepared for discussion and negotiation within the LRTAP working groups.

The objectives on heavy metals outlined by the eight Arctic environment ministers in the Nuuk Declaration on Environment and Development in the Arctic are to support the development of the appropriate protocols under the LRTAP auspices and to consult with non-ECE nations whose emissions and discharges of heavy metals may contribute to the environmental inventory in the Arctic.

2.3 Radionuclides

2.3.1 *The Nature of the Problem*

Sources of radionuclides found in the Arctic are both natural and anthropogenic, but in most areas the natural sources are dominant. Anthropogenic contamination of radionuclides in the Arctic ecosystem are derived from the following sources: atmospheric fallout (both local and global) from nuclear weapons tests and accidents; nuclear fuel reprocessing installations in Europe; and, on a local scale, releases from dumped Soviet radioactive materials and wastes and submarine and military aircraft accidents.

The main releases of radionuclides to the Arctic environment from atmospheric nuclear test explosions occurred during the late 1950s and early 1960s. Contamination from these tests currently constitutes the main anthropogenic source of radionuclides in the Arctic. The radionuclides from this historical source reach the Arctic through direct fallout, transport by ocean currents, and land runoff. Underground and undersea nuclear explosions, whether for military or civilian purposes, apparently have resulted in comparatively insignificant releases of radionuclides into the Arctic environment. Atmospheric nuclear weapons testing is subject to the 1963 Nuclear Test Ban Treaty. However, China and France continued to conduct atmospheric tests until 1980.

Releases from nuclear fuel reprocessing plants in Europe (primarily Douneray, Cap de la Hague, and Sellafield) have contributed to the introduction of radionuclides, primarily by water transport into the Arctic. These discharges have now been greatly reduced.

Currently, there are several nuclear power plants in close proximity to the Arctic Circle, and there are two nuclear power plants within the Arctic. Routine discharges from these power plants do not appear to cause an appreciable load in the Arctic of radionuclides. However, there is a significant concern regarding the possibility of accidents with nuclear power plants. The Chernobyl accident contributed significant radionuclide contamination in some parts of the Arctic in the 1980s. Measurements of cesium-137 radioactivity in reindeer meat from various European Arctic locations following the Chernobyl release indicated that about 25 percent of the total cesium-137 present could be attributed to the accident.

In 1968, an American B-52 aircraft carrying four nuclear weapons crashed on the ice in Greenland. The crash resulted in the release of plutonium onto the ice. While a great deal of the plutonium was recovered, approximately 0.5 kg was deposited in the underlying sediments, where it appears to remain sequestered.

The former Soviet Union and the Russian federation carried out dumping at sea of liquid and solid radioactive wastes, both prior to and after the Soviet Union became a contracting party to the London Convention (1972). Some of these dumping activities took place in contravention of the provisions of the London Convention. The most significant dumped wastes are those of submarine or marine nuclear reactor assemblies containing spent fuel. Assessments of the rates of release of radionuclides and the resulting consequences in terms of risk to human health and the environment are currently being conducted by the International Atomic Energy Agency (IAEA), to be completed in 1997.

The potential effects of high radiation exposure include elevated cancer rates and genetic damage.

Radionuclides are of particular concern in the Arctic because Indigenous peoples consume caribou and reindeer, which feed almost exclusively on lichens. Lichens are especially effective at trapping radioactive fallout and natural radionuclides such as lead-210. Long-living radionuclides, such as lead-210, strontium-90, and cesium-137, remain in vegetation for very long periods of time (all three have half-lives of twenty to thirty years). Some Indigenous peoples in the Arctic have been and will remain exposed to higher doses of radionuclides than the general Arctic population because they consume large quantities of wild food products (country foods) such as caribou and reindeer meat, freshwater fish, game, mushrooms, and berries. These foods have higher contamination levels of radionuclides than agricultural food products. This is particularly true of the anthropogenic cesium-137, which becomes incorporated in reindeer meat, and the naturally occurring polonium-210 (a decay product of lead-210), which is incorporated in reindeer liver and kidney.

There appears to be consensus among experts that the available information suggests that *current* levels of radionuclides in the Arctic ecosystem do not pose a widespread threat to human health or the environment. However, there is concern with respect to the risks associated with potential releases of radionuclides from sources presently disposed in the Arctic ecosystem (primarily the marine environment) and possible new releases, particularly from nuclear power plant accidents. It is, however, possible that leakages from dumped marine sites of insoluble radionuclides such as plutonium will not be widely dispersed from the dump site.

2.3.2 Some Approaches to Managing Radionuclides

Regulatory control mechanisms at the domestic, regional, and global levels are in place to provide an adequate basis for the protection of human health and the environment from radionuclide contamination.

The Convention on Prevention of Marine Pollution by Dumping Waste and Other Matter (referred to as the London Convention) has a global scope and is aimed at the dumping of substances that are harmful to

human beings and marine species. The parties to the convention are committed to prevent marine pollution by the dumping of any substances. The convention establishes two annexes: the disposal of substances listed in annex I is prohibited, while substances listed in annex II may be dumped subject to a permit being given. Annex I lists, among other things, mercury, organo-halogenic compounds, and high-level radioactive waste. Low-level radioactive waste and waste containing, for example, certain heavy metals, including lead, are listed in annex II. The system for issuing permits for dumping low-level radioactive waste is coordinated with the International Atomic Energy Agency. However, a ban on the dumping of such substances has been in force since 1983.

The 1972 Oslo Convention and the 1974 Paris Convention address the same types of pollution problems as the London Convention, but with a regional scope—the northeast Atlantic. The Oslo Convention prohibits the dumping of hazardous substances from ships and aircraft, but also provides for licensing the dumping of certain substances. The dumping of those substances listed in annex I is totally prohibited, while substances listed in annex II may be dumped when a licence to do so has been granted. The Oslo Convention is supplementary to the Convention for the Prevention of Marine Pollution from Land-based Sources (Paris Convention). This convention entered into force in 1978 and aims at prevention of land-based pollution (by, for example, river runoff) of the northeast Atlantic. In 1986, the convention was amended to include pollution through the atmosphere. Annexes list various substances which the parties oblige themselves to prevent from entering the marine environment.

There is no doubt that considerable amounts of radioactive materials have been dumped contrary to these various conventions. Therefore, local, regional, and global action need not necessarily be directed towards developing new laws, but must focus efforts on vigorously adhering with uniform precision to the laws currently in effect. Lax and inconsistent monitoring and enforcement of current laws cannot continue. This applies equally to the eight signatories to the Arctic Environmental Protection Strategy. Under the IAEA and in association with AMAP, work

is ongoing with an assessment of the nature and consequences of past and present radioactive contamination, and risks posed by potential sources. The result of this work will include a report to the eight environment ministers of the Arctic countries in 1997, as well as a report to the IAEA and the London Convention. At the 1993 ministerial conference in Nuuk, the ministers requested AMAP, in cooperation with international and national agencies, to establish a database of sources, types, and levels of radionuclide contamination of the atmosphere, the aquatic and the terrestrial environments of the Arctic, and the northern areas.

2.4 Acidification and Arctic Haze

2.4.1 *The Nature of the Problem*

Studies conducted under a number of national and international fora (including the LRTAP Convention, the Nordic Council of Ministers, and AMAP) indicate that acid deposition is a significant environmental concern in large parts of the Ferro-Scandinavian and Euro-Arctic regions. Acid deposition results primarily from sulphur and nitrogen oxides derived from anthropogenic emissions. A significant amount of the sulphur input to the Arctic ecosystem is observed during the winter months when air currents are more favourable for long-range transport from the industrial centres of Europe and Asia. A winter air pollution phenomenon called "Arctic haze" occurs over extensive areas of the Arctic. This reddish-brown haze, first observed in the 1950s, is composed of solid and liquid particles containing a wide variety of contaminants, including sulphate compounds, soot, and hydrocarbons.

The effects of acidification on freshwater and terrestrial ecosystems have been extensively documented. A continuous excessive acid load in the Arctic ecosystem may lead to the gradual mobilization of certain toxic substances from soils, bedrock, and sediments, including heavy metals. In addition, during the winter, acids can accumulate in the snowpack and, when released in the spring, the resulting "acid shock" can pose a serious threat to freshwater ecosystems. Although Arctic acid precipitation levels in the winter are lower than in southern urban areas, the consequences

of contamination on the Arctic ecosystem may be far greater because of its unique sensitivity.

Recent Nordic studies have indicated that global climate change may lengthen the survival time of acidifying substances in the atmosphere, thereby increasing the distances which may be travelled by these substances between their emission source and their ultimate deposition. This may have significant implications for the Arctic.

2.4.2 *Some Approaches to Managing Acidification and Arctic Haze*

The principle mechanism utilized to achieve international cooperation to reduce acidification in the Northern Hemisphere is the LRTAP Convention. Since coming into force in 1983, the convention has adopted three protocols specifically relevant to acid deposition: the Helsinki Protocol (1985), dealing with the reduction of sulphur emissions; the Sofia Protocol (1988), concerning control of emissions of nitrogen oxides; and the Sulphur Protocol (1994), concerning further reductions of sulphur emissions. In November 1995, the executive body to the convention authorized the initiation of negotiations for a second nitrogen protocol.

2.5 Petroleum Hydrocarbon Pollutants

2.5.1 *The Nature of the Problem*

The total input of petroleum hydrocarbon pollutants (PHPs) in the Arctic region is difficult to estimate. In addition to natural sources, PHPs have several anthropogenic sources, including vessel discharges, vessel accidents, atmospheric fallout (mainly of polycyclic aromatics and soot particles), river fluxes, and oil drilling exploration.

PHPs have potentially more severe effects in the Arctic than in temperate latitudes because reduced light hinders ultraviolet radiation and low temperatures hamper biological degradation of oil. The low temperatures also reduce evaporation of volatile petroleum components compared to more temperate regions. In warmer climates, wave action is a major agent for reducing the effects of oil pollution.

In Arctic areas, the ice cover reduces the impact of waves. These factors mean that oil decomposition is generally slow in the Arctic, thereby prolonging the period in which the ecosystem is exposed to petroleum. Chronic effects of oil spills on wildlife and other biota are generally not well understood. Case studies, primarily conducted after the *Exxon Valdez* spill, suggest that severe effects at all levels in the ecosystem are to be expected from large oil spills. At the present time, the Arctic is subjected to relatively low levels of PHPs, except in certain areas such as large ports and in locations affected by chronic spills.

Large on- and offshore oil and gas reserves have been located in the Arctic and sub-Arctic. Significant production of these hydrocarbons occurs in the Beaufort region of Alaska and in several fields in Russia. Exploration activity indicates that this region is potentially a large petroleum reserve. Intensive exploration and production activities significantly increase the risk of accidental pollution from crude oil, oiled cuttings, drilling muds, and natural gas emissions to the atmosphere. The risk of accidental pollution will increase with future expansion of exploration and production of hydrocarbons from the shelf areas because of heavy ice and unfavourable weather conditions. Uncontrolled oil gushers have significant environmental consequences. Indeed, an unconstrained Arctic offshore blowout in winter would be virtually impossible to remediate until the following spring.

2.5.2 Some Approaches to Managing PHPs

Several general international agreements mentioned in the preceding sections have application to the regulation of PHPs in the Arctic. The 1973/78 International Convention for the Prevention of Pollution from Ships (MARPOL) includes a 1978 protocol which states that a vessel requires an International Oil Pollution Prevention Certificate to be deemed seaworthy. This convention is operated by the International Maritime Organization. The purpose of the convention, which is global in scope, is to prevent pollution from ships and other vessels (e.g., oil rigs). A number of other international agreements are also directly relevant to the shipping of oil. Among these

are the 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation (not yet in force), the 1971 International Convention for the Establishment of an International Fund for Compensation for Oil Pollution, and the 1969 International Convention on Civil Liability for Oil Pollution Damage. Some of these agreements have a limited geographical scope, and the Arctic region is not always well covered. Moreover, the standards established, for example, with regard to transportation, may not be adequate to protect the ecologically sensitive Arctic.

3.0 THE EVOLUTION OF ENVIRONMENTAL CONTAMINANTS MANAGEMENT: A CRITIQUE AND SOME SUGGESTIONS FOR FUTURE ACTIONS

Although many aspects of the following sections are generic in nature relative to the management of toxic substances generally, the emphasis has been focused on aspects relevant to the family of environmental contaminants which appears to be the most pervasive in the Arctic.

3.1 Frontier Economics

Over the past century, humankind has attempted to manage ecosystems in many different ways. Until the middle of this century, the industrialized world tended to see the environment as an infinite source of raw materials and a bottomless sink for waste. This view, referred to as "frontier economics," prevails even today in some parts of the world, including some sectors of industrialized nations. The economy was seen to exist in complete isolation from the environment. The most pressing problem for frontier economics was the scarcity of human capital, not of natural resources. Consequently, the destruction of the environment made little difference as fresh territory and fresh natural resources remained within easy reach for exploitation. For the most part, prevailing natural and social science theories, and the institutions implementing those theories (governments, universities, industries, and political and legal institutions), also adopted frontier economics as a primary environmental management strategy.

3.2 End-of-Pipe Pollution Control

In the 1960s and 1970s, people began to be aware of the interdependence of humans and the environment, and became increasingly concerned about the significant and irreversible harm being done to human health and the environment by polluting activities. Although the environment continued to be subjugated to economics, the need to conserve and maintain resources became a consideration for the first time. Polluters were made to be more accountable for the damage they caused. However, decision-making processes continued largely as before, with environmental consequences considered only after basic decisions were made. Indeed, the predominant strategy for environmental protection employed by governments at that time was to issue regulatory controls designed to capture pollutants *after* they had been created. Typically, pollution control regulations consisted of standards prohibiting the release of emissions, except as authorized pursuant to the terms of legally binding permits. Generally, the response by industry to these legislated standards was to attach "end-of-pipe" technology onto existing processes to capture pollutants beyond predetermined allowable limits. By definition, this end-of-pipe reaction ensured that pollutants would have to be managed after they had been created. As different environmental problems were identified, usually because their adverse effects were readily apparent (smog, dying lakes, endangered species, and so forth), regulators passed new laws to address each new problem. The tactics and goals of these different laws were rarely consistent or coordinated, even if the pollutants to be controlled were the same. Governmental administrative structures established to implement these laws were generally uncoordinated and reactive as well.

By the early 1980s, the focus of environmental understanding and concern began to shift dramatically from highly visible and relatively straightforward pollution problems to the infinitely more complex and potentially more damaging environmental risk problems associated with activities such as the release of environmental contaminants. Concern over the loss of amenity values associated with black smoke was replaced by legitimate fears of significant human health and environmental harm caused by small

concentrations of chemicals detectable only with the most sophisticated equipment. The localized problem of the factory next door became national and international in dimension. Moreover, there was heightened awareness that end-of-pipe controls designed to regulate one pollutant in one environmental medium often resulted in the contamination of another (cross-medium transfers).

By the early 1980s, a highly formalized environmental risk assessment process became the cornerstone for the management of environmental contaminants in most developed countries, led by the United States. The US approach was detailed in a very influential publication by the National Academy of Sciences (NAS) in 1983. This now classic work, entitled *Risk Assessment in the Federal Government: Managing the Process*, established the ground rules for risk assessment and risk management. Today, most environmental management agencies throughout the world have used the basic NAS paradigm as a foundation for assessing the "acceptability" of risks associated with the use of toxic chemicals.

As defined by the NAS treatise, the risk assessment process is science-driven, and, as such, is considered objective and value-free. It draws on the principles and data from many scientific disciplines, including biology, chemistry, physics, medicine, geology, epidemiology, and statistics. The assessment paradigm outlined by the NAS defines four fields of analysis, which describe the use and the flow of this scientific information in the risk assessment process, as follows:

- *hazard identification*—to determine whether the available scientific data describe a causal relationship between a chemical substance and demonstrated injury to human health or the environment;
- *dose-response relationships*—to establish the quantitative relationship between exposure and response where adverse health or environmental effects have been observed;
- *exposure analysis*—to identify and characterize exposure in various populations; and

- *risk characterization*—which uses the conclusions of each of the preceding analyses in an attempt to describe the anticipated risk.

The purpose of the risk assessment process is to characterize, as far as possible, the risk associated with an activity such as the release of an environmental contaminant. Risk management is the selection and implementation of a particular control strategy in order to ensure that the risk activity remains within the bounds of acceptability.

During the early 1990s, some experts began to question the value of the risk assessment process as the most cost-effective means for managing toxic substances. First, at its best, state-of-the-art science that attempts to characterize environmental risk remains inherently incapable of providing definitive answers about the nature, the extent, and the probability of adverse consequences attributable to the use of toxic substances. This is so because the scientific information that is needed to define the boundaries of the "risk of harm" is generally uncertain or simply unavailable. Indeed, virtually all of the scientific disciplines that are brought to bear in characterizing risk are qualified by substantial uncertainties due to theoretical and practical limitations in scientific knowledge, data collection and interpretation, modelling protocols, and the selection and interpretation of analytical methodologies.

Second, some experts began to question the insistence that the formalized risk assessment process was a purely scientific activity that was completely objective and value-free. Indeed, virtually every aspect of the risk assessment process requires the exercise of subjective human value judgment. It simply cannot be done by mechanically following predetermined rules.

Finally, a formalized risk assessment process is a complex, time-consuming, and expensive process that, generally, requires substance-by-substance analysis by highly trained experts in a variety of scientific disciplines. Moreover, the implementation of the risk assessment process and the need to continually update the assessments require a sophisticated, institutionalized infrastructure capable of generating and analyzing new data, continuously

monitoring the environment, and, when appropriate, enforcing the risk management decisions. Many countries, particularly developing countries and countries with economies in transition, simply do not have adequate human or financial resources or the institutional capability to enable them to conduct comprehensive risk assessments or to implement, monitor, and enforce the toxic chemical laws and policies resulting from their assessments. This reality is important to take into consideration when developing strategies for the effective global management of environmental contaminants that find their way into the Arctic.

3.3 Pollution Prevention

Since the early 1990s, the concept of *pollution prevention* as a new approach for managing toxic substances has gained a large following. Pollution prevention is defined as any practice that avoids, reduces, or eliminates the *use* of toxic substances, or that avoids, reduces, or eliminates the *creation* of pollution without creating or shifting new risks to communities, workers, consumers, or the environment. In principle, pollution prevention strategies avoid the creation of pollutants in the first place, as opposed to risk assessment strategies that attempt to manage pollutants to some level of "acceptability" *after* they have been created. While pollution prevention must rely on science to identify the proximate cause of human and environmental injury, it is not necessarily wedded to a system of decision making that requires exhaustive analysis of environmental risks as a precondition to policy formulation and action.

The pollution prevention strategy is an excellent practical expression of the guiding principles identified with sustainable development. For example, pollution prevention adopts the precautionary principle, which states that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" (principle 15 of the Rio Declaration). Life cycle management, including cradle-to-grave accountability, is also an important component of pollution prevention. Companies that produce and

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market polluting technologies and substances, particularly in developing countries, must play a leadership role in ensuring that their technologies and products are managed in such a way as to avoid environmental contamination, whether local, regional, or global. As stated in several international fora, including the United Nations Conference on Environment and Development, it is no longer acceptable for developed countries to allow the export of polluting technologies or substances without sharing the responsibility for eliminating the environmental damages associated with those activities.

When promoted effectively, pollution prevention provides a more competitive economy; avoids the transfer of pollutants from one media to another; minimizes the need for costly enforcement; limits future liability with greater certainty; avoids costly cleanup in the future; and, generally, uses energy, materials, and resources more efficiently. Pollution prevention practices incorporate a broad range of activities, including input substitution, product or technology reformulation, process modification, low-impact technology, on-site closed-loop recycling, good housekeeping, toxics use reduction targets, and bans and phaseouts of certain environmental contaminants. All such practices are designed to reduce or eliminate the use of toxic substances and to reduce, avoid, or eliminate the creation of pollutants in the first place.

3.4 Socioeconomic Considerations in Environmental Contaminant Management

3.4.1 *Socioeconomic Impacts of Environmental Contaminants in the Arctic*

The intrinsic link between Indigenous peoples, their lifestyle, including their reliance on country foods, and the Arctic environment means that the implications of environmental contaminant loading in the Arctic extend far beyond the physical consequences of health impairment, contamination of food species, and environmental degradation.

Subsistence living is an essential part of Northern culture that brings respect, pride, and social coherence to individuals, families, and communities. The

harvesting of country foods contributes to physical fitness and good health, including spiritual well-being. Subsistence living allows for the transfer of traditional, cultural, and social values across generations. It also provides the opportunity for more intimate contact with nature, fostering a healthy relationship with, and respect for, the living and the nonliving environment. Various studies have confirmed that, in the absence of other sociological factors, communities sharing these social values are healthy communities.

Contamination of country foods can lead to reduced impetus for subsistence living and increased dependence on imported foods, and may have direct consequences on all of the aforementioned benefits, with significant negative health and social implications. Often the tendency is to purchase imported foods of less nutritional value than country food. Poor nutrition is a recognized risk factor in the development of diabetes, cardiovascular disease, and dental problems.

Even the uncertainty related to the *potential* contamination in country foods may lead to diet change and to negative social effects, including changes in lifestyle, loss of an economic base, and social and cultural interruptions. Instances have been documented where women have stopped eating country foods during pregnancy and sometimes have stopped breast-feeding altogether as a result of fear related to possible contamination of country foods.

The contamination of the Arctic environment, including its wildlife, also has implications for tourism, particularly sport fishing and hunting. Even the perception of potential contamination of the area could jeopardize a source of income for local Arctic people.

The implications of perceived and real environmental contamination for commercial harvesting in the Arctic can be significant. Some Indigenous peoples in the Arctic are dependent on the export of wildlife, including fish and reindeer and caribou meat. Concern about the impacts of the Chernobyl accident resulted in import restrictions from many countries, even where the radioactivity level in biota was negligible. Reduced sale of reindeer meat following these accidents had documented negative impacts on the living conditions of the Sami people in Scandinavia.

Most of the significant environmental contaminants present in the Arctic environment are attributable to long-range transport from sources in the major industrialized and agricultural regions of the world that are far removed from the Arctic. Therefore, the Arctic peoples, who are most vulnerable to these contaminants and must pay the fiscal and socioeconomic costs associated with the negative impacts of these substances, reap virtually none of the benefits associated with their production or use. Newly recognized principles of environmental justice require that individuals and communities that are forced to accept risks associated with the use of polluting technologies or substances must also play a major role in designing, implementing, and monitoring strategies designed to prevent the creation of those risks in the first place. This is particularly obvious where those individuals and communities derive very little benefit from the polluting activities. This notion of environmental justice supports the emerging right of Indigenous peoples to maintain their cultural lifestyle without environmental interference, particularly where they bear little, if any, responsibility for the pollution. Indigenous peoples and their communities also have a vital role in environmental management and development because of their knowledge and traditional practices. Principle 22 of the Rio Declaration and chapter 26 of Agenda 21 further recognize these rights.

3.4.2 Socioeconomic Factors Influencing the Use of Polluting Technologies and Substances

Social, economic, and political considerations significantly influence the global generation, marketing, use, and release of toxic substances, human and environmental exposure to them, their effective management, and the development and access to viable (cost-effective, practical, and less risky) alternatives. These considerations can be analyzed by examining institutional arrangements, national infrastructures, information availability and transfer, technology development and cooperation, pricing structures, efforts to reduce the risk of exposure to toxic substances, and domestic and international legal arrangements for their effective management. These considerations are all interrelated

and interdependent, are complex and difficult to qualify and quantify, and, perhaps most importantly, differ markedly in different parts of the world.

Economic factors that influence the use of, and exposure to, toxic substances and access to viable alternatives include international trade incentives and barriers, pricing practices, trade liberalization and globalization, domestic and foreign lending and borrowing policies, the costs of research and development (including the costs of protecting intellectual property), national tax incentives and disincentives, and the financial and marketing policies of national and international donor and aid agencies and multinational chemical companies. The allocation of scarce human and financial resources and the productive capacity and purchasing power (or lack thereof) of the poor are also important economic determinants.

Similarly, social factors that influence the global marketing and use of toxic substances and alternatives include income distribution (within countries and among countries and regions throughout the world), access to understandable information, education (including literacy) and training, cultural diversity, gender equity, investment in basic human needs (including food, shelter, health, and education), population growth, and environmental justice (including the rights of individuals and communities to participate in environmental decisions that affect them, the rights of Aboriginal peoples to maintain their cultural identities and lifestyles, and the rights of future generations to a secure and healthy environment).

Political factors are important to the toxics issue because they influence approaches for resolving environmental problems within and among nations. Political factors also affect the extent to which the use and release of toxic substances or alternatives are influenced by human (including environmental) rights, democratic pluralism (e.g., transparent and accessible decision making, the participation of nongovernmental organizations, the role of the administrative, executive, and judicial branches of government), and good governance (competent, credible, and honest public administration).

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The following sections are intended to provide a sampling of the types of socioeconomic considerations that must be understood and addressed in working towards global action for the effective management of toxic substances. In this regard, it is important to appreciate that many of the contaminants that have found their way into the Arctic ecosystem are released using technologies and products sold to developing countries by transnational industries, governments, and donor agencies in developed countries, and ultimately require shared responsibility in searching for global solutions. Furthermore, these substances have often caused serious acute impacts to human health and the environment in the countries in which they are released.

Global pricing policies of toxic chemicals provide an illustration of the type of economic factor that influences the use and release of toxic substances or less risky alternatives. The expanding use of persistent organic pesticides in developing countries provides an excellent case in point. Generally, the lower the commodity prices, particularly for exports from developing countries, the greater the need for low-priced inputs. Because pesticide POPs are off-patent and are relatively simple to formulate, they are generally priced much lower than newer, more sophisticated on-patent pesticides that could be used as substitutes. Many of these pesticides have been banned in the exporting countries because of human health or environmental concerns. DDT is still used in many developing countries because, unlike most developed countries, there remains a serious malaria problem, and DDT is a cheap way to control the mosquito vector which transmits the disease. Full cost accounting principles that would look at the environmental impacts, possible chronic effects, nontarget effects, and the implications of regional or global contamination are not factors that are taken into account when determining whether or not to manufacture, export, or use these substances.

In identifying and analyzing the socioeconomic issues that are inherent in the use, production, and release of toxic substances, as well as in the possible global management strategies, a critical, albeit tenuous, consideration is the impact of "globalization." Globalization refers to the growing interdependence

of the world's national economies, driven in part by rapid technological development, capital mobility, and increased trade liberalization. The critical role that globalization plays in the current international political economy is substantial, and yet it is difficult to analyze, assess, and articulate its impacts in a direct "cause-effect" manner. Perhaps the most difficult, but equally the most important, point to understand involves the dynamics through which investment/technology flows do in fact have profound local effects. This section will only touch on a few of these factors that have a direct impact on the use of toxic chemicals that are released into the environment and find their way into the Arctic.

As regards the production and consumption of toxic substances, international trade and trade and environmental policies may influence concerns related to toxics in two general ways. First, trade and trade-related policies affect the environment and human health by altering the volume and international location of global production and consumption activities. While difficult to assess, it is important to analyze the relationship of trade liberalization and the expansion of output/consumption of particular products of concern. Second, environmental policies in some countries can have an impact on other countries through international trade. The development of country-specific environmental policies such as environmentally motivated taxes, subsidies, charges, standards, and other regulatory frameworks may act to alter patterns of production and trade through their various impacts on international competitiveness. As such, this expanding web of environment-related policies has a discernible impact on the investment and production decisions of multinational firms and their home countries.

Both the Organisation for Economic Co-operation and Development (OECD) member countries and non-OECD countries have responded to the environmental concerns posed by toxic chemicals by developing a variety of regulatory and policy frameworks. One aspect of the development of strict regulatory structures in the OECD countries may be the relocation of certain types of chemical production from these countries to countries where the environmental laws and policies or their enforcement

are less strict. Studies have pointed towards these reallocations as being means, in part, to avoid the more costly environmental standards that a number of the more advanced industrial economies have, or may in future impose. Additionally, chemical production plants are often perceived as dangerous and are becoming increasingly unpopular among local communities in these countries. Within this context, further research is required in order to assess the aggregate impact of national environmental regulations and policies in the OECD-member countries to determine how these have influenced the global production, use, marketing and export, and disposal of toxic chemicals, particularly off-loading and industrial migration.

For the most part, the pollution of today is a legacy of technology that is no longer sustainable—products, processes, and systems that extract resources, manufacture goods, produce food, and provide services that were designed and implemented in an age when environmental considerations were largely ignored or misunderstood. Yet, even as technology was a significant part of the problem, it also holds out tremendous potential as part of the solution. Indeed, the world's capacity to provide for its social, economic, and environmental needs, given a rapidly growing population, must depend to a large extent upon environmentally superior technology. Recent revolutionary advances in information systems, telecommunications, biotechnology, new materials, and miniaturization hold out great promise in dramatically reducing the stress on the global ecosystem while ensuring high levels of production capacity. Equally, a new environmental ethic is beginning to drive technology development. Clearly, there are costs involved in the development of alternative control technology or technology related to modification of industrial processes to prevent or reduce the formation or release of environmental contaminants. This includes the up-front research and development costs, the cost of applying or implementing the technology, and the costs related to the phaseout and replacement of equipment. Technology for the cleanup, storage, and disposal of environmental contaminants also involves considerable costs and benefits.

Unfortunately, current technologies that could reduce pollution, protect human health and the environment, and lower economic costs are not being universally adopted, particularly in the most rapidly industrializing countries in Asia and Latin America. Rather, pollution-intensive technologies and processes are being exported to rapidly industrializing countries from countries that were industrialized earlier. In addition to the pricing and globalization issues, there are several reasons why the demand for environmentally superior technology in industrializing countries is weak.

First, the deployment of environmentally superior technologies in developed countries has, to a significant extent, been the product of societal intervention, rather than market forces. Principally, public regulatory structures and the threat of legal liability have ensured that many of the environmental costs of economic activity have been internalized and, ultimately, passed on to the consumer. But for many industrializing countries, the legal and scientific institutions and infrastructures needed to implement, monitor, and enforce these laws and policies are weak or nonexistent.

Second, the difficulties inherent in building an adequate technical infrastructure, including the training of managers and technicians, continue to frustrate both economic development and environmental improvement in many countries. This is particularly acute for certain sectors of the economy and for small and medium-sized industries that lack the knowledge, resources, and linkages needed to access and adopt environmentally superior technology.

Third, while the dissemination of usable information about environmentally superior technologies is a major focus of programs for upgrading environmental conditions, little is known about the extent or nature of information deficiencies in many parts of the world or the most effective way to remedy them. Almost certainly, these countries need practical information suited to individual users' needs that give industrial firms "real-time" information and hands-on consultation on how to employ environmentally superior technology so as to reduce pollution while making a profit.

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Fourth, multilateral funding initiatives must embrace small and medium-sized private enterprises as well as the large public sector projects. There also seems to be general consensus that redeployment rather than increasing public funding to ensure the proper allocation of financial resources remains a key to success.

Fifth, efforts to promote environmentally superior technology development, including the deployment of financial resources to fund environmentally sound technologies from multilateral institutions, must focus on pollution prevention rather than pollution control, abatement, and remediation strategies. While pollution control and remediation must remain necessary, innovation in cleaner production technology will yield substantially greater benefits over time, particularly in rapidly industrializing countries where more new plants and equipment are being installed than in more mature economies. To some extent, industrializing countries may be able to bypass or "leap-frog" the complexity and expense associated with managing pollutants after they have been created by adopting technologies that avoid, reduce, or eliminate the creation of the pollution in the first place.

Finally, the concept of technology transfer, which tends to imply a one-way, one-time transplant of "hardware" must give way to technology cooperation. Technology cooperation implies an active, enduring collaboration among parties where long-term environmental and social goals are considered along with near-term economic gains.

It is for reasons such as these that management strategies designed to prevent the creation of environmental contaminants that find their way into the Arctic ecosystem must focus on global action, but with enough flexibility to allow for the accommodation of regional realities. In this regard, no one component of society is exclusively responsible for the problems associated with environmental contaminants, nor is any one component of society exclusively responsible for finding solutions. Differences exist between developing and developed countries in assuming responsibilities and tasks related to finding solutions. Finally, the responsibility for the proper management and regulation of toxic substances must be shared by developed and

developing states. Chapter 19 of Agenda 21 expresses a widespread recognition of this shared responsibility.

4.0 CONCLUSIONS

This paper has reviewed five groups of environmental contaminants that are currently considered to be of priority concern in the Arctic. It is concluded that current national, regional, and international legal arrangements are not adequate to ensure the continued protection of the Arctic ecosystem from contamination by these substances. However, several national and international initiatives clearly have the potential to develop, implement, monitor, and enforce strategies and practices that will significantly reduce the creation and release of these substances. The eight circumpolar nations can play a vital leadership role by promoting these initiatives in a manner that accommodates differing socioeconomic realities throughout the world.

Among other things, conference participants may wish to consider actions

- to ensure that the appropriate authorities in their own countries are in compliance with all of the laws and policies related to environmental contaminants, and where necessary advocate the strengthening and enforcement of these provisions;
- to promote market-based instruments for managing toxic substances, but continue to use command-and-control regulations to reduce toxics use, including bans, phaseouts, and severe restrictions in appropriate circumstances;
- to ensure that their international trade and financial arrangements are consistent with the goals of effective toxics management;
- to examine the financial and environmental policies of national donor and aid agencies and banking institutions to ensure that they do not promote the generation or use of polluting activities or produces, particularly in developing countries and countries with economies in transition;
- to consider the negative implications of exporting pollution-intensive technologies and products and

prohibit their export to countries that lack the infrastructure needed to properly regulate these activities, while, at the same time, ensuring access to practical, less risky alternatives.

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Presentations

Arctic Contaminants: A Canadian and Circumpolar Perspective

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THE ISSUE

Contaminants are widespread throughout the Arctic environment, being present in air, water, sediment, soil, snow, plants, animals, and humans. Many of these chemical compounds bioaccumulate and biomagnify in food chains, from plankton up to humans.

Northern ecosystems are particularly vulnerable to contaminants. The persistence and lipophilic (tendency to accumulate in fat) nature of many contaminants entering the Arctic result in their accumulation in the fat-rich tissues of Arctic organisms. Highest levels are reached in long-lived mammals at the top of the food chains (e.g., seals, whales, polar bears, and even humans).

Northern residents, especially Northern Aboriginal people, are susceptible to exposure to contaminants and to their potential adverse effects because of a dietary dependence on Arctic fish and wildlife. In incidences of accidental or chronic exposure to high levels of some contaminants, toxicological effects have been detected, including reproductive disorders, immune dysfunction, developmental abnormalities, and cancer. This raises concern for the health of the Arctic ecosystem and its peoples. However, the extent to which these and other effects result from the low levels being found in Arctic biota remains to be determined.

Scientists have been monitoring contaminants in the Arctic since the 1970s, however, concern over this issue heightened in the 1980s with some disturbing findings. Increasing evidence that Native traditional foods contained contaminants raised questions about resulting levels in Northern Aboriginal people. Thus, in 1985, PCBs were measured in the blood of Inuit from the community of Broughton Island, Northwest Territories, known to have a relatively high per capita intake of traditional foods. Results showed that blood PCBs exceeded tolerable levels in 63 percent of all children under fifteen years of age, in 39 percent of women fifteen to forty-four, in 6 percent of men fifteen years and older, and in 29 percent of women forty-five years and older. This study revealed elevated organic mercury levels in some individuals.

A study in the late 1980s showed that PCBs in the breast milk of Inuit women from the east coast of Hudson Bay (northern Quebec) were approximately five times higher than in Caucasian women of southern Quebec. The elevated levels in these Inuit were attributed to their position at the top of the Arctic aquatic food chain.

ARCTIC PROGRAMS

These and other findings led to the establishment of programs to address environmental issues, particularly related to contaminants, in the Arctic. In 1989, on the initiative of Finland, an international conference was held concerning the protection of the Arctic environment. Cooperation continued, and at Rovaniemi in 1991, the eight Arctic countries signed a declaration adopting the Arctic Environmental Protection Strategy (AEPS), also known as the Finnish Initiative. Within this strategy, the Arctic Monitoring and Assessment Program (AMAP) was established "to monitor the levels and assess the effects of anthropogenic pollutants in all components of the Arctic environment." Under AMAP, each of the eight countries is carrying out implementation plans consisting of a large variety of contaminants-related projects. The combined effort will enable a comprehensive assessment of the contaminant situation in the circumpolar region. An extensive scientific assessment and an accompanying synthesis (the State of the Arctic Environment Report) will be produced in early 1997.

In 1991, Canada established its Arctic Environmental Strategy (AES) to meet environmental challenges within the Canadian Arctic. One arm of this strategy is the Northern Contaminants Program, the objective of which is "to reduce and, where possible, eliminate contaminants in traditionally harvested (country) foods." This six-year program will produce an assessment of contaminants in the Canadian Arctic in 1996.

These two programs focus primarily on three types of environmental contaminants, namely, persistent organic pollutants (industrial chemicals and by-products [e.g., PCBs, dioxins, and furans] and pesticides [e.g., DDT, toxaphene, chlordane, HCH, and HCB]), heavy metals (e.g., cadmium, mercury, and lead—the three of most concern in the Arctic), and radionuclides (e.g., cesium-137 and strontium-90).

Domestic and international initiatives have amassed a great deal of information over the last five years on the sources of these contaminants, how they reach the

Arctic, their distribution throughout the Arctic environment, how they are taken up by ecosystems and accumulated within food chains (including humans), and their potential risks for human health.

EMERGING INFORMATION

Sources and Transport

There are few, if any, sources of persistent organic pollutants (POPs) within the Arctic. These chemicals originate from industrial and agricultural regions to the south. The main transport pathway of POPs to the Arctic is the atmosphere. The low temperatures characteristic of the Arctic reduce volatilization, resulting in preferential transport of semivolatile compounds to the Arctic by a process known as global distillation, or the "grasshopper effect." Oceans and north-flowing rivers carry less volatile POPs into the North.

Heavy metals are present in Arctic ecosystems both as a result of natural processes (local geology) and anthropogenic activities. It is difficult to distinguish the relative contributions made by these two sources. Anthropogenic sources originate both from long-range transport (largely via the atmosphere) and from local industrial (e.g., the Kola Peninsula) and mining sites.

Radionuclides in the Arctic environment are primarily derived from natural sources. Anthropogenic inputs result from atmospheric weapons testing (no longer a source following testing bans), nuclear fuel waste reprocessing (e.g., Sellafield, though these discharges are now greatly reduced), nuclear accidents, and nuclear waste dumping (dumping in the Arctic marine environment does not currently pose a significant risk).

Levels and Trends

Results from the Agassiz Ice Cap, Ellesmere Island, Canada, indicate that inputs of organochlorine pesticides to the Arctic are decreasing (conclusive evidence only for chlordane and α -endosulphan). Other organochlorines (e.g., PCBs) continue to enter the Arctic.

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Organochlorine pesticide levels have shown declines in some Arctic biota, including ringed seals at Holman, Northwest Territories, and seabirds at Prince Leopold Island, Northwest Territories.

Records from the Greenland Ice Cap indicate that lead supply to the Arctic has been declining since the 1970s, coinciding with a decrease in the use of leaded gasoline.

There is evidence that levels of mercury and cadmium in ringed seals and beluga whales have increased over the last ten to twenty years in the Canadian Arctic.

Artificial radionuclide concentrations in the Arctic environment reached maximum levels in the mid-1960s and have subsequently declined through most Arctic areas.

Terrestrial and freshwater pathways of exposure to radionuclides are more important than marine pathways. Present levels of cesium in caribou liver has dropped as much as tenfold since the 1960s.

Ecosystem and Human Health

Some Arctic Indigenous populations are more exposed to artificial radionuclides because of their dependence on wild food such as caribou, reindeer, freshwater fish, mushrooms, and berries, which have higher contamination levels than agricultural products. In general, however, the level of human exposure to radionuclides in the Arctic is low and is not considered a human health risk to Arctic residents.

In some instances in Canada, elevated levels of contaminants in biota have resulted in the issuance of public health advisories restricting or banning the consumption of certain traditional foods.

In the Yukon, such health advisories have been issued about high levels of toxaphene in burbot livers and lake trout from Lake Laberge and Atlin Lake, and about elevated concentrations of cadmium in caribou kidneys and livers. In the Northwest Territories, advisories have been issued about toxaphene in burbot liver from the Slave River, about mercury in fish from Lac Ste. Therese and Lac à Jacques, and about caribou kidneys and livers.

An assessment by Health Canada on POPs in marine mammals across the Canadian Arctic recommended restrictions on the consumption of beluga muktuk and seal blubber based on elevated levels of the pesticides chlordane and toxaphene. DDT, PCBs, and other contaminants were also high in these traditional foods.

Beluga muktuk and seal blubber are heavily consumed by Inuit in the Canadian Arctic. Health advisories do not take into account the substantial benefits associated with marine mammal harvesting and consumption. These include social, cultural, and economic benefits, as well as the high nutritional value of these foods. Altering the traditional diet could result in a less nutritious diet, which could result in increases in malnutrition, heart disease, and diabetes in the Inuit population. Inuit representatives from across Canada met with officials from Indian and Northern Affairs Canada and Industry Canada, and it was felt that, because of the known risks of altering the traditional diet, the uncertainties of the risk posed by the contaminant levels, and the large safety factor incorporated into the recommended maximum weekly intake values, the data do not warrant advising people to alter their current diets.

Findings of contaminants in the milk of Inuit women have raised concern among breast-feeding mothers in the Arctic. It is clear, however, that the health benefits to newborns associated with breast-feeding, such as mother-child bonding, immunological benefits, and nutritional values far outweigh the risks attributed to date to infant exposure to contaminants through breast-feeding.

To date, effects (e.g., impaired development, cancers and mutations, immune disruption, and reduced resistance to disease) resulting from contaminant exposure that have been observed in biota from polluted regions such as the Canadian Great Lakes are not evident in the Arctic.

Effects in humans from chronic low-level exposure to contaminants are difficult to determine given confounding socioeconomic factors such as smoking and alcohol abuse.

Arctic ecosystem and human health effects studies are continuing.

INTERNATIONAL INITIATIVES

Recognizing that pollution is transboundary and that contaminants being found through the Arctic originate primarily from regions farther south, the eight Arctic countries strongly support international efforts to eliminate or reduce the release of harmful substances into the global environment. These include the following.

- Preparations for a possible POPs protocol under the UN Economic Commission for Europe (UN ECE) Convention on Long-Range Transboundary Air Pollution (LRTAP). Driven initially by concerns with contamination in the Arctic, Canada leads the preparatory work. In November 1995, the executive body to the LRTAP Convention authorized its negotiating arm (Working Group on Strategies) to proceed with the negotiation of a POPs protocol.
- An evaluation and assessment of environmental and socioeconomic considerations, which should be considered in a future global, legally binding instrument dealing with POPs, initiated by the Governing Council to the United Nations Environment Programme (UNEP). Preparatory work is being carried out by an ad hoc working group (chaired by Canada). A final report to UNEP and the World Health Organization will be made in early 1997 through the Intergovernmental Forum on Chemical Safety.
- The Washington Declaration on the Protection of the Marine Environment from Land-Based Activities as adopted 1 November 1995, which articulates the intent to develop a global, legally binding instrument for the reduction and/or elimination of emissions, discharges, and, where appropriate, the elimination of the manufacture and use of the persistent organics identified in the UNEP declaration (as outlined above).
- The June 1995 experts meeting on POPs held in Vancouver, Canada, which was initiated in response to a request from AEPS ministers at their second meeting in Nuuk, Greenland. Canada cohosted this meeting with the Republic of the Philippines, following an announcement to the UN

Commission on Sustainable Development. The meeting produced a conference statement (agreed upon by participants from forty countries) that identified key components and opportunities for effect global action.

- Preparations for a possible heavy metals protocol under the UN ECE LRTAP Convention. Germany leads the preparatory work. In November 1995, the executive body to the LRTAP Convention authorized its negotiating arm (Working Group on Strategies) to proceed with negotiation of a heavy metals protocol focusing on lead, mercury, and cadmium.



POPs Global Commitments and Regional Actions in the Arctic¹

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How can governments move forward from a global convention to regional actions against persistent organic pollutants (POPs) with particular emphasis on a regional action plan in the Arctic? This question was posed to the author by the secretary of the Second Conference of Parliamentarians of the Arctic Region. Before answering this question, it is necessary to look into the reasons why POPs are of concern, what is already being done, and what is the best way forward.

1. INTRODUCTION

*By viewing Nature, Nature's handmaid Art,
Makes mighty things from small beginnings grow.*
(John Dryden)

In the world today, a large quantity and a wide variety of organic compounds that are not found in nature are being produced and released into the environment.

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Many of these compounds are resistant to degradation and accumulate in the environment. Chemicals of this sort are commonly called persistent organic pollutants (POPs), since they are resistant to photolytic, biological, and chemical degradation.² (A short description of POPs is given in appendix A.)

POPs are of particular concern to human health and the environment as they resist, to a varying degree, photolytic, biological, and chemical degradation, and therefore generally exhibit at the same time toxicity, persistence, and bioaccumulation in the food chain. They are characterized by low water solubility and high lipid solubility, leading to their bioaccumulation in fatty tissues. Organisms at the top of the food chain, in many instances human beings, generally accumulate the substances to the highest levels and are, therefore, most vulnerable to potential health risks. Further bioaccumulation and biomagnification can occur through the transfer of maternal contaminant burdens through the yolk of the egg, the placenta, and lactation. POPs have been shown to cause serious immune and metabolic dysfunction, neurological deficits, reproductive anomalies, behavioral abnormalities, and carcinogenesis in both humans and wildlife. Recent studies on the effect of some organohalogen compounds have indicated much more radical effects on human beings and wildlife than previously envisaged.³

The POPs that pose the most serious threat to the environment are anthropogenic; we owe their existence in the environment to human activities. These substances are used and released into the environment from diffuse sources as well as point sources, including manufacturing processes, product use and application, waste disposal, leaks and spills, and combustion of fuels and/or wastes. The bulk of these releases sooner or later winds up in the marine environment. Once dispersed into the environment, cleanup is not possible, and owing to the semivolatile nature of these substances, they cycle through the ecosystem and travel short and long distances because of revolatilization by air and through accumulation in biota.

POPs are found all over the world, independent of their place of production or use. Many of them are transported a considerable distance by air and sea, and therefore

exist in measurable concentrations far from the original sites of use.

In general terms it may be said that the concentration of POPs decreases with increasing distance from human activity. However, the available data on their concentrations, e.g., data on the concentrations of organochlorine compounds in samples obtained at different latitudes, indicate that there is a relationship between the volatility of individual compounds and their relative concentrations found in the samples.

The main transport routes of POPs into the ocean are atmospheric currents, rivers, and sewage. Since these chemicals are found in areas that are far away from known sources, it is believed that atmospheric currents are the main transport route and that their semivolatility enables them to move long distances in the atmosphere before deposition occurs.⁴

1.1 The Scope for Action

As the foregoing discussion indicates, POPs pose an imminent threat to the environment, its living resources, and, hence, human health. The scope and significance of the problem is global, as these pollutants have serious implications for human health and the environment all over the globe, regardless of where they are released. Once released into the environment they exhibit transboundary movement on a global scale. What is worrying is that most of the POPs have been anthropogenically produced for only fifty to sixty years, and if it is assumed that the revolatilization process mentioned is slow, the present situation gives only an instantaneous picture of the situation, and the bulk of the most volatile material that has been released will eventually end in the Arctic.

The consequences of the releases are often felt far away from the source of origin, owing to the semivolatile nature of the POPs, and it is not possible to limit actions to national approaches and regulations. Regional and globally concerted action is required in addition to national action to deal successfully with this serious problem. Currently, no global scheme or instrument is in force to deal with these substances, although their environmental effects

and behaviour leave no doubt about the need for global measures. The serious hazards these substances pose to humans and animals necessitate expedient global actions to reduce and eventually eliminate their release into the environment.

2. PRESENT APPROACHES TO POPS MANAGEMENT

Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning. (Winston Churchill)

This section deals briefly with present approaches to POPs management in the world. A more thorough review is given in reports for the ECE-LRTAP⁵ and from the Vancouver meeting on POPs.⁶

2.1 International Action

2.1.1 International Law

International laws relating to POPs as such are virtually nonexistent. True, a number of international laws draw on principles from the field of environment. Labour and transportation law, as well as international trade laws, touch on the issue, but none of them approaches the problem from the perspective of the potential impacts of POPs. However, there are a number of indicators, most notably from Agenda 21 and from the work of the Commission on Sustainable Development (UN CSD), the UN ECE Convention on Long-Range Transboundary Air Pollution (LRTAP), and regional agreements such as the OSPAR, HELCOM, and Barcelona conventions, that support the growing need to address this aspect of international environmental governance in a direct, concerted, and integrated manner. In this context the special circumstances of the European Union, as a regional economic integrated organization, have to be recognized.

The author believes it is fair to say that the progress that led to the adoption of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, arising from obligations in Rio, has addressed this issue very seriously.

Furthermore, in his opinion, both UNEP's Governing Council Resolution 18/32 on Persistent Organic Pollutants (May 1995), where a process was set up to evaluate the need for coherent global action, and the Global Programme of Action that was adopted in Washington (November 1995) are results of that effort.

In the Washington Declaration,⁷ ministers declared their commitment to protect and preserve the marine environment from the impacts of land-based activities, by

acting to develop, in accordance with the provisions of the Global Programme of Action, a global, legally binding instrument for the reduction and/or elimination of emissions, discharges and, where appropriate, the elimination of the manufacture and use of the persistent organic pollutants identified in decision 18/32 of the Governing Council of the United Nations Environment Programme. The nature of the obligations undertaken must be developed recognizing the special circumstances of countries in need of assistance.

Particular attention should be devoted to the potential need for the continued use of certain persistent organic pollutants to safeguard human health, sustain food production and to alleviate poverty in the absence of alternatives and the difficulty of acquiring substitutes and transferring of technology for the development and/or production of those substitutes.

The process that has been established for this purpose will be carried forward by the Inter-Organisational Programme for the Sound Management of Chemicals (IOMC), involving governments, industry, public interest groups, and relevant international organizations, towards such a legally binding instrument. The work will be reported to the UNEP Governing Council in January 1997, where a decision will be made on whether a legally binding instrument will be established. It is worth noting that the UNEP decision identifies twelve substances, whereas the Global Programme of Action sets up a process to include more in the instrument, if so deemed necessary.

2.1.2 Other International Work

A number of activities are under way at an international, regional, and subregional level on measures to control POPs. Table 1 lists some of these, but for further reference please refer to ECE-LRTAP State of Knowledge Report, page 3.

2.2 National Action

In this context, it is necessary to distinguish between the *developed* world and the *developing* world.

2.2.1 National Action in the Developed World

In essence there is a common agreement, which is reflected in chapter 5 in the Background Paper of the International Experts Meeting on Persistent Organic Pollutants,⁸ that

today, most industrialised states do have a domestic legislation that can regulate all aspects of POPs, including imports and exports, manufacture and storage, transportation, use and disposal ("cradle to grave" or more generally "cradle to cradle"). Many of these countries also have worker, bystander and consumer health laws that are designed to minimise the potential for adverse impacts to human health associated with exposure to toxic chemicals including POPs. Moreover most industrialised states have banned or severely restricted the domestic use of many

intentionally manufactured POPs, and have regulated products and processes that unintentionally produce POPs as unwanted by-products to eliminate or reduce their release into the environment....

Most developed nations have adequate institutional capabilities and human and financial resources that enable them to assess, monitor and enforce their toxic chemical laws and policies. Nevertheless there is near universal recognition that these states should continue to strengthen their control systems to further reduce the negative impacts of toxic chemicals, including POPs.

2.2.2 National Action in the Developing World

Regarding the situation in the developing world, there is also general agreement that "most developing countries do not have an adequate legislative framework and/or administrative infrastructure that can adequately manage toxic chemicals. While the progress to remedy this situation may be real, there remains the recognition that both regulatory and infrastructure are critical in these countries."

During the preparation for the Washington conference and especially at the Vancouver meeting, it became clear to many of us from the Western world how serious the occupational problems related to the use of POPs are in the tropical countries. Similarly, the meeting exposed the need for education on the

Table 1. Examples of activities at international, regional, and subregional levels.

Activity	Short description
IPCS program	Chemical hazard assessment.
UNEP PIC-process	Countries should give their consent to imports of chemicals from countries in whose territories those chemicals are banned or severely restricted.
FAO	Provides a major forum for cooperation on risk assessment and management of pesticides.
OECD chemical program	The overall aim is to improve protection of health and the environment with respect to the use of chemical substances.
EC programs	Coordinated regulation through EU countries.

handling, storage, and effects of these chemicals in the same countries. Presumably, the most effective short-term action in the tropical countries is education.

The industrialized countries have now banned several chemicals that are still used in the tropical countries, often as vector control, but also as pesticides to increase crops. Their use in the tropical countries is very well understandable taking into account the enormous difficulties these countries are facing, but too often such use takes place without proper training and knowledge of the final consequences. The absence of regulations and pressure to minimize the use of many of these substances in countries where they are most widely used, however, leaves little incentive to the industry to develop new and less harmful products. This again is a strong argument for a global convention that takes the needs of the developing world into account, but at the same time creates a situation favourable for developing new and better products.

2.3 Implementation

It is not possible to leave this topic without addressing the importance of implementation. Even in fields where international regulation is intensive, as in marine transport, where ships are sailing between areas where external inspection of compliance is commonly carried out, complaints like the following are not uncommon.

Concern about alarming differences between safety and anti-pollution standards in different countries has led to recommendations that a new subcommittee be formed to deal expressly with the implementation of the conventions and the instruments.⁹

Implementation will be further elaborated in section 3.

3. IMPLEMENTATION—ACTION ELEMENTS

Laws and regulations are necessary, but not sufficient, to implement obligations. (Anonymous)

The preceding sections provided an overview of approaches to reduce pollution from contaminants in

general, since the issue of POPs is interrelated with other forms of action against environmental threats. However, as has already been reflected, the consequences of POPs releases often affect others than the perpetrator, and therefore the POPs problem requires other solutions. This section deals with those solutions separately.

3.1 General

Protection of the environment involves control of many human activities. The legal framework, both national and international, for the protection of the environment is critical, but it must be borne in mind that the legislation is not a goal in itself; more is needed. The real goal is to minimize the impacts and use of certain substances, and there are various approaches that will best be dealt with in an integrated manner to obtain such result.

Land-based sources are indeed the main contributors to pollution of all kinds, from both point sources and diffuse sources, but their control involves hard and costly decisions. The main elements of an action plan are shown in figure 1. It emphasizes the need for the collection of data in order to have adequate information on which to base any decision. Setting up a strategy is followed by action. A prerequisite to all effective programs is to monitor and evaluate the effects of the action taken. When the effects are below the efforts put into the action, it is often necessary to change the strategy and implement it through new action. Finally it is necessary to have the stamina to continue until the goal is fulfilled. Unfortunately that is not often the case.

3.2 Level of Action

The decision on whether an action should be taken on a national, regional, or global basis is dependent on the scale of the effects caused by the pollution or activities.

When the substances/activities are difficult local problems, such as nutrients and oil pollution, they are presumably best dealt with locally, with measures tailored to their special circumstances. Those who have been in favour of the regional approach have

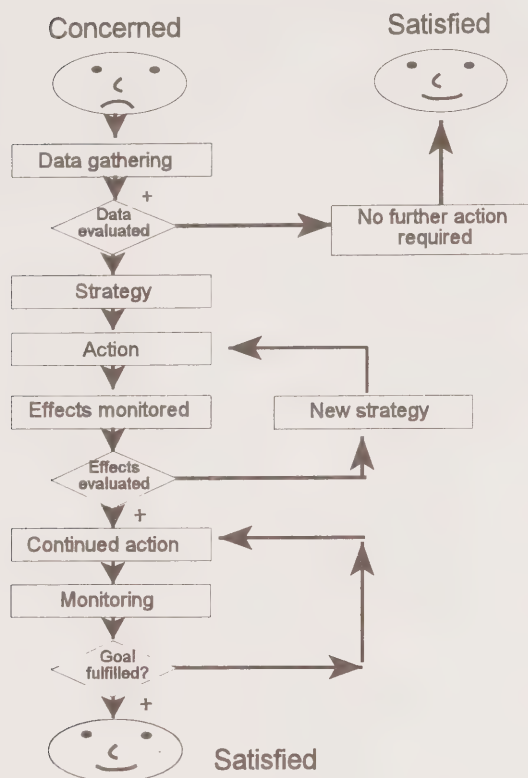


Figure 1. A simplified action plan.

pointed out, quite validly, that decisions should be taken at the lowest decision level possible, where the benefit of reducing pollution has the strongest effect on the participants themselves.

They have also pointed out that there are immense differences in technologies, environmental conditions, culture, and financial capabilities throughout the world, and therefore decisions and commitments on a global scale in a global convention have to be diluted down to the lowest denominator.

Another aspect of the issue involves the effects of the competing position of industry. When burdensome restrictions are placed upon industry in one country, history has shown that there will always be a tendency to move industrial plants and facilities to places with fewer or less onerous restrictions. These are the main

arguments for cooperation on a regional basis where the same rules apply.

The POPs problem is somewhat different. These pollutants have serious implications on a global scale for human health and the environment, regardless of where they are emitted or discharged. Therefore, globally concerted and effective action is needed to address this problem.

The hierarchy of actions that seemed to have wide support among nations that took part in the progress leading to the Washington meeting are listed in table 2.

3.2.1 Global Level

It has often be said that pollution has no borders. This hard fact makes it very important to support international fora on preventing pollution.

General international law, commitments through conventions, and guiding principles including soft law, are the key elements. Such cooperation is not

Table 2. Possible hierarchy of action in preventing pollution from land-based sources.

Level of action	Means
Global	International law, general commitment (UNCLOS, Climate change, OZONE + possibly organohalogens)
	Generally agreed principles (soft law) including guiding principles for donor countries and funding institutions.
	Global institutions: Regulations, guiding principles for emissions, monitoring and selected action.
Regional	Cooperation on monitoring and actions.
	Decisions and recommendations.
National	Laws, regulations and directives, economic incentives, education, enforcement of national laws plus international and regional decisions and recommendations, monitoring, and action.

limited to consultation on technical solutions, but it is essential that consideration be given to different capabilities such as financial, cultural, and technical. All global institutions that provide for funding environmental projects and donor countries are more or less bound to ask for compliance with the specific internationally agreed criteria. Regarding the global action on POPs, reference is made to the Washington Declaration and chapters 3 and 4 in the Global Programme of Action.

3.2.2 Regional Level

At the regional level, more emphasis is placed on action (as expressed in tables 1 and 2) and in enforcement of principles and agreements, i.e., UNEP Regional Seas Programmes, OSPAR, and HELCOM. The Global Programme of Action sets down further obligations. The objectives of regional action put forth chapter 3 of the Global Programme of Action are to "strengthen and, where necessary, create new regional cooperative arrangements and joint actions to support effective action, strategies, and programs for: (a) identification and assessment of problems, (b) establishment of targets and priorities for action, (c) development and implementation of pragmatic and comprehensive management approaches and processes, and (d) development and implementation of strategies to mitigate and remediate land-based sources of harm to the coastal and marine environment."

LRTAP (Convention on Long-Range Transboundary Air Pollution) is of major significance for Arctic cooperation regarding POPs since it covers a large part of the Northern Hemisphere, i.e., most countries of Europe, all North America, and a number of Asian republics of the former Soviet Union. LRTAP, which is a UN ECE convention, constitutes a framework within which the contracting parties identify the problems posed by transboundary air pollution and accept their responsibility to undertake appropriate abatement action.

3.2.3 National Level

Implementation at the national level requires the various tools described below.

3.3 Implementation at the National Level

When determining a course of action, it is necessary to decide what tools are available. Key tools commonly applied in environmental protection are

- education
- technical solutions
- regulations
- laws, directives, voluntary agreements
- economic measures
- contingency planning and emergency response.

These tools, or parts of them, could be employed on a global, regional, subregional, multilateral, bilateral, and national basis. While education and national legislation are obviously best carried out on a national basis, at least parts of technical solutions, economic measures, and general commitments through legislation can benefit from international cooperation. It must be underscored, as outlined in the Global Programme of Action, that it is essential at the national level to take up the concerted application of measures to reduce wastes and conserve raw material.

Let us look briefly at some of these items.

3.3.1 Education

Distributing information based on sound scientific findings is the most effective way to alert people and prod them into reassessing their own behaviour and changing their habits. The sooner this education begins, the more effective it will be; the more realistic it is, and the more firmly based on actual facts, the better. It cannot be stressed too often that preventive and remedial actions are not limited to advanced technology; they deal more with attitude, education, and training. (See table 3.) Systematic in situ training of people dealing with these issues on a day-to-day basis, will, in the end, be the most effective measure. Clearinghouse functions play an important part in this information gathering, but they need to have strong linkage to training, i.e., capacity building.

One aspect has to be mentioned: it is all too easy with the wrong sort of dialogue to divert attention from

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Table 3. Preventive measures from land-based sources within each country.

Sector	Means
Public	Education Better habits Pushing the government and industry
Government	Laws, regulations, and directives Education International cooperation Economic measures
Industry	Better habits Voluntary agreements Technical solutions (clean technology)

important issues and focus on trivial ones. And false alarms are especially dangerous since they confuse people and make them suspicious of further warnings and less likely to take them seriously. Those who cry "wolf" whenever they see a dog are not furthering the cause of environmental protection; quite the contrary. The necessity of openness in society and room for criticism and rules for public and nongovernmental organizations (NGOs) should also be stressed.

3.3.2 Technical Solutions

Technical solutions, especially in industry, but also in other land-based activities, aim at the following:

- To plan, before starting any (industrial) process, to allow as little emission or discharge as possible. This requires system solutions, including the choice of environmentally sound raw materials and processes.
- To minimize, as far as possible, the access of pollutants to water, air, and eventually soil in the course of industrial processes or activities.
- To clean up already polluted water, air, and soil. This includes making solid waste and waste from the cleaning processes less hazardous to the environment.
- To avoid, if possible, all processes or activities that will lead to polluting emissions, effluents, or discharges from diffuse sources.

In essence, these are the basics of what are called best available technology (BAT) and best environmental practice (BEP), now widely applied in industry and other activities in Western societies.

3.3.3 Laws, Regulations, Directives, and Voluntary Agreements

In modern societies with many conflicting interests, it is vital to have laws, regulations, and directives. However, the bookshelves of the world are full of codices containing well-meaning laws that nobody obeys. The author is becoming more and more convinced that laws on the environment should fulfill the following rigorous criteria:

- The aims and purposes of the laws should be clear.
- Laws should not be passed unless it is quite clear that observing them is technically possible.
- Laws must have penalizing and compulsive provisions in case of nonobservance.
- Laws should not be far removed from what is generally accepted by the public.
- There must be some means of verifying that the laws are observed.

These need further explanation.

The aims and purposes of the laws should be clear. All too often the underlying purposes of environmental laws and regulations are left unexplained. People are more likely to observe laws if they can see the purpose and advantages of doing so.

Laws should not be passed unless it is quite clear that observing them is technically possible. It is quite easy to ban activities, but it is very difficult to expect compliance unless there is a technical solution available to the problem, or one is at least foreseeable, such as the substitution of less harmful materials for harmful ones. There are those who might say that this is shifting responsibility away from industry, where it belongs, and that government authorities are not responsible for devising technical solutions. But in reality, it is only a matter of facing facts. The reality

is that the authorities, industry, and preferably the public must work together on making the necessary changes in industrial processes and public consumption patterns in general.

Laws must have penalizing and compulsive provisions in case of nonobservance. Laws containing no provisions for action in case of nonobservance are meaningless.

Laws should not be far removed from what is generally accepted by the public. If there is any doubt regarding public feeling about a given issue, then it is more practical to educate people in order to raise public awareness. When that has been achieved, then it is possible to lay down laws and directives.

There must be some means of verifying that the laws are obeyed. This is the essence of all law enforcement. No verification, little compliance.

Voluntary agreements between industry and the regulators have recently received more attention. Industry, which usually has the best technical knowledge of the process, but is at the same time driven by market forces, comes to an agreement with the regulators to reduce certain environmental concerns such as discharges. Industry gains freedom, and at the same time regulators have given industry a kind of incentive to reduce pollution. Voluntary agreements can be effective instruments as long they are transparent and there are ways to ensure performance.

3.3.4 Economic Measures

It has often been said that "everybody is an environmentalist until he has to pay for it." A good idea, then, is to reverse the situation and reward "good behaviour" through economic incentives. This approach has in fact been used to reduce the input of contaminants into the environment. The Global Programme of Action gives very good examples of such approaches to be used at the national level (appendix B).

3.4 Implementation at the Regional Level

The Global Programme of Action sets the framework for regional actions regarding POPs as follows.¹⁰

105. Regional actions should include:

(a) Encouraging existing regional agreements and programmes of action on the prevention and elimination of pollution of the marine and coastal environment from land-based activities, to set up and implement programmes and priority measures to prevent, reduce and/or eliminate emissions and discharges of POPs and materials containing POPs from all sources. To this end, they should, *inter alia*,

- (i) Adopt targets and timetables for reduction and/or elimination of POPs releases through their substitution, and on best available techniques (BAT), best environmental practice (BEP), and integrated pollution prevention and control (IPPC);
- (ii) Adopt decisions and recommendations on the development of harmonized assessment criteria and monitoring programmes based on regionally or internationally agreed quality control and quality assurance procedures;
- (iii) Provide member States with technical information and advice regarding handling, use and disposal of POPs and their substitutes and ways and means to minimize and eliminate their release to the environment;
- (iv) Ensure transparency of the implementation of decisions and recommendations by adopting regular reporting on implementation and monitoring of measures regarding POPs; and
- (v) Assess compliance with, and the effects of, the agreed measures;

(b) Encouraging States that are not already parties to regional agreements and

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action plans on the prevention and elimination of pollution of the marine and coastal environment from land-based activities to join such cooperation and to cooperate on a bilateral and/or a multilateral basis in the regulation of POPs;

(c) Encouraging the strengthening of or, as appropriate, establishing regional institutions to deal effectively with the problems of POPs.

It is clear from this list that the main emphasis at the regional level is on joint timetables for reduction using BAT and BEP, harmonized monitoring and assessment criteria, and sharing of information. This is precisely where the strength of regional cooperation lies. A common understanding of the situation in different countries, together with a kind of competitive pressure, provides a vehicle for effective implementation. Joint assistance through information sharing and personal contacts is of great help in order to set and achieve common goals. And finally, the implementation reporting of each country causes additional pressure to fulfill obligations that have been taken on board when ratifying these conventions.

The LRTAP Convention has been developing a protocol on POPs using an approach similar to that of the Global Programme of Action. It lays down criteria for handling substances differently depending on their characteristics and the threat they pose.

The LRTAP model is based upon an assessment model dividing substances into the following categories.

- **Elimination of Substances**—To eliminate the use, consumption, and production of certain substances in accordance with time frames to be agreed upon. (Examples under discussion include aldrin, hexa-bromobiphenyl, chlordane, hexachlorobenzene, dieldrin, mirex, endrin, toxaphene, PCBs, and DDT).
- **Restriction on Use, Consumption, and Production**—Restrict the use, consumption, and/or production of certain substances to certain uses and/or levels in accordance with time frames to be

agreed upon. (Examples under discussion include chlorinated paraffins, pentachlorophenol, lindane, and PAHs [creosote]).

- **Restriction of Products**—With a review to eliminating or reducing the release of certain substances, reduce the concentrations of substances in products to certain levels in accordance with time frames to be agreed upon. (Examples under discussion include products containing substances in appendix A, dioxins, furans, hexachlorobenzene, and DDT.)
- **Stockpiles of Substances and Products**—Make the best possible efforts to eliminate, in an environmentally sound manner, existing stockpiles of substances which it has been agreed to eliminate; to restrict the use, consumption, and production of products which it has been agreed to restrict and which are above specified levels, and to report to the parties on progress.
- **Release Restriction**—Reduce emissions and other releases of certain substances in accordance with levels and time frames to be decided. This should also apply to international emissions standards, BAT, and BEP. Apply BEP for pesticide use in agriculture to the extent that circumstances will allow.
- **Miscellaneous**—Report on policies and measures. Employ economic instruments.

4. REGIONAL ACTION PLANS REGARDING POPS IN THE ARCTIC

It is all about common sense, but common sense is not all that common. (Based on Voltaire)

It is appropriate to turn now to the questions posed by the secretary to the author: How can governments move forward from a global convention to regional actions against POPs with particular emphasis on a regional action plan in the Arctic?

The present knowledge of the situation indicates that, possibly apart from low-temperature waste incineration, which creates dioxins and furans, the sources

of POPs within the Arctic are relatively small compared to the global transport into the area.¹¹ The Arctic is receiving POPs from outside, and their own local actions will not be sufficient to stop the influx. It must be emphasized, however, that the POPs issue is interrelated to the handling of chemicals in general. In this respect, due to the vulnerability of the Arctic environment, the Arctic nations have inescapable duties in proper chemical handling, including POPs, if they want to live in this environment in a sustainable way.

Examples of essential items needed for the Arctic states to reduce the threat of POPs in the present and near future are shown in table 4.

Furthermore, Iceland and Greenland are the only Arctic countries solely within the Arctic region. Other territories are parts of much bigger states, and that leaves them with additional duties to ensure that southern counterparts restrict releases of POPs into the environment and follow rules.

The main thrust is to combine subnational, national, regional, and global actions against POPs into a multisided approach where every effort supports the other. There is nothing new in these suggestions, they are just common sense. Yet, let us try to make common sense more common by creating the right atmosphere that facilitates proper action, instead of indulging in endless talk.

5. SUMMING UP

In the end it is not what is agreed to be done, but what is done, that makes the results. (Anonymous)

The conclusions of this paper can be summed up in ten points.

1. Persistent organic pollutants pose an imminent threat to the environment, its living resources, and hence human health. Some have referred to them as one of the world's worst upcoming problems.

Table 4. Essential items needed for Arctic states to reduce the threat of POPs.

What	How
All Arctic states	
Better knowledge of the state of the environment	Intensive monitoring of known pollutants. Research on the effects of POPs and their environmental fate.
Source inventories	Thorough scientific inventory of possible releases.
Registration of handling and use of POPs	Regulations for internal uses, PRTP; PIC for external.
Legislation	Banning import, export, uses, etc.
Restriction in releases	Working permits, BAT, and BEP.
Education	Education in the broadest sense of the word: public, users, workers, managers, etc.
Cooperation with industry	Work jointly in creating rules, voluntary agreements, quality standards within the industry.
Economic incentives, facilitating change in use and consumption	Taxing the most dangerous existing releases, subsidizing cleaner technology, subsidizing substitutes.
Work for regional and global conventions	Proposed global convention and LRTAP (OSPAR and HELCOM).
Arctic states with borders outside Arctic	
Use the scheme above in territories outside the Arctic	Apply the same standards and rules inside and outside the Arctic.
Ensure compliance in territories outside the Arctic	Legislation and enforcement.

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2. The scope and significance of the problem is global as these pollutants have serious implications for human health and the environment throughout the globe, regardless of where these substances are released. Hence, it must be addressed nationally, regionally, and globally.

At the national level . . .

3. It must be borne in mind that legislation is not a goal in itself. The real goal is to minimize the impact and use of certain substances. Various approaches described below are suitable to obtain such results, but they are usually most effective when applied through an integrated approach.
4. Coherent and integrated action, where all stakeholders such as government, industry, and private and public sectors, including NGOs, are involved, is essential. The tools can be different, including education, legislation, voluntary agreements, the development of new technology, substitute policies, or economic incentives. They are best performed in an integrated manner. In order to assess the success of any action, unbiased monitoring is needed.
5. The attitude of people often matters more than technology. Therefore, education in the broadest sense of the word is needed. This would include educating the public, but also all relevant users of the products such as managers, engineers, workers, and last, but not least, the consumers.

At the regional level . . .

6. Working towards a common goal with decisions and recommendations. Cooperation on monitoring and actions where the results are evaluated.

In the Arctic . . .

7. Action plans should follow the outline of figure 1 and include the main elements listed in table 4, bearing in mind that POPs are related to the handling of other chemicals and the treatment of environmental pollutants in general.

At the global level . . .

8. A global convention is needed to address the transboundary problem of POPs. This would indeed lead to more attention being given to the serious occupational health problem of workers in the developing world, as foreseen restrictions would give the chemical companies an incentive to produce safer products.
9. The author envisages the proposed convention on POPs as somewhat similar in structure and approach to the OSPAR Convention. Due to the complexity of the topic, a multidisciplinary approach is needed. For many of the substances, the only solution is to ban the product in question. In some cases, approaches like BAT or BEP are the most valuable, and in other instances only guidelines are needed. Any global convention on POPs will have to take into account the difficult circumstances of the developing world and states with economies in transition; otherwise such a convention would have very limited effect.
10. It is essential to have some kind of independent monitoring mechanism in this approach so scientists, legislators, and politicians can be assured that they are moving in the right direction.

All this is essential so that POPs will not make "mighty things from small beginnings grow."

NOTES

1. The paper is based on Standards and Regulations Relating to Persistent Organic Pollutants (POPs) in the OSPAR Countries and a Short Analysis of Possible Approaches for Other Countries, but deviates in the end where it places a special emphasis on the regional approach.

2. This section is from Consideration of Global Measures on Persistent Organic Pollutants (POPs), Position of the Nordic Countries, which was prepared in the context of preparations for the Washington Conference.

3. LRTAP-ECE. An Overview of Persistent Organic Pollutants in the Environment. Prepared for the Task Force on Persistent Organic Pollutants for the Convention on Long-Range Transboundary Air Pollutants. UN ECE, Canada. June 1994. Gives an excellent overview.

4. Solomon, Forget, Stemeroff, and O'Leary. 1995. Persistent Organic Pollutants. An Assessment Report on DDT-Aldrin-Dieldrin-Chlordane-Heptachlor, Hexachlorobenzene-Mirex-Toxaphene, Polychlorinated Biphenyls, Dioxins, and Furans. Draft interim report. Inter-Organisational Programme for the Sound Management of Chemicals (IOMC).

5. The Convention on Long-Range Transboundary Air Pollution. For presentation to the Meetings of the Working Groups on Technology and on Effects. 28 June–1 July, 1994. Geneva.

6. The Background Paper of the International Experts Meeting on Persistent Organic Pollutants. Draft, chapter 5 and annex I. Vancouver 1995.

7. Washington Declaration on the Protection of the Marine Environment from Land-Based Activities. Approved by ministers in November 1995. UNEP (OCA)/LBA/IG.2/6.

8. Vancouver meeting, June 1995.

9. IMO Newsletter 3, 1992.

10. Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, as adopted on 3 November 1995 by the Intergovernmental Conference which met for that purpose in Washington, D.C. from 23 October to 3 November 1995. UNEP (OCA)/LBA/IG.2/7 (5 December 1995).

11. Protection of the Arctic Marine Environment (PAME). 1996. Draft report to AEPS Ministerial meeting, Inuvik, March 1996.

APPENDIX A

Some Basic Facts about Persistent Organic Pollutants (POPs)

What Are Persistent Organic Pollutants?

They are organic compounds that degrade very slowly in the natural environment, and they accumulate in wildlife and human beings and can cause adverse environmental effects. POPs are chemicals having a ring, a chain, or branched framework of carbon atoms that are resistant to photolytic, biological and chemical degradation.

What Compounds Are Included in this Group?

The main groups often associated with POPs are halogenated hydrocarbons, often termed organohalogens, and PAHs (polycyclic aromatic hydrocarbons).

Organohalogens are a group of organic compounds which have chlorine, bromine, iodine, and/or fluorine bound to them (organochlorines, organobromines, organoiodines, organofluorines). The most important subgroup is organochlorines.

Organochlorines are, for example,

- polychlorinated biphenyls (PCBs)—a group of compounds which number at least 209 different compounds
- hexachlorobenzene (HCB)—the active component of the pesticide named lindane
- hexachlorocyclohexane (HCH), which is the active component of the pesticide named lindane
- dichlorodiphenyltrichloroethane (DDT) and dichlorodiphenyldichloroethene (DDE), which is the degradation product of the former, a well-known pesticide
- toxaphene—the industrial name for an insecticide consisting of a complex mixture of compounds (over 30,000 compounds) also called polychlorinated camphenes (PCC)
- dioxins and furans—compounds like polychlorinated dibenzo-p-dioxin (PCDD) and polychlorinated dibenzofurans (PCDF), unwanted by-products in the production of many agricultural and industrial chemicals

Organobromines are, for example, brominated flame retardants such as polybrominated diphenylethers (PBDE).

Organofluorines are, for example, greenhouse gases and ozone depletion gases like CFC (halon and freon).

PAHs are compounds consisting of hydrocarbon rings. Combustion processes are responsible for the majority of PAHs releases. PAHs are, for example, benzo(a)pyrene, anthracene, benzo(a)anthracene, phenanthrene, chrysene, fluoranthene, and pyrene.

Sources

Sources of persistent organic compounds are found worldwide and can be divided into three categories: direct discharges, public use, and remobilization of the compounds that enter the environment from sinks and deposits.

Direct discharges come from industries that either produce or use the compounds.

Public use causes emission, direct and indirect runoff of products like pesticides (herbicides, insecticides, etc.) in agriculture. The same applies to handling waste and wastewater, and incomplete incineration of wastes.

Remobilization occurs when the compounds enter the atmosphere from former sinks in nature.

Distribution

Distribution of persistent organic compounds falls into three categories.

1. Near the source, as with some PCBs and PAHs.
2. Far away from the source, as with HCH, some elements of toxaphene, and some PCBs.
3. Even distribution over the globe, as with HCB and some elements of toxaphene.

Effects

Persistent organic pollutants accumulate in wildlife and human beings and can have the following serious health and environmental effects:

- increased cancer frequency, degradation of the nervous system, necrosis (degradation) of muscles;
- deformation of the skeleton, anatomical deformations;
- hormonal mimic, increased death of embryos, increased deformation of embryos, decreased sperm and egg quality, hormone unbalance,
- increase of mutations, loss of biodiversity;
- disturbance in sight and smell, behavioral disturbance;
- decreased defence against infections, increased allergies;
- decreased functional capacity of the liver and the kidneys.

[Source: Consideration of Global Measures on Persistent Organic Pollutants (POPs). Position of the Nordic Countries.]

APPENDIX B

V. RECOMMENDED APPROACHES BY SOURCE CATEGORY

B. Persistent organic pollutants (POPs)

1. Basis for action

100. Persistent organic pollutants (POPs) are a set of organic compounds that: (i) possess toxic characteristics; (ii) are persistent; (iii) are liable to bioaccumulate; (iv) are prone to long-range transport and deposition; and (v) can result in adverse environmental and human health effects at locations near and far from their source. POPs are typically characterized as having low water solubility and high fat solubility. Most POPs are anthropogenic in origin. Anthropogenic emissions, both point and diffuse, are associated with industrial processes, product use and applications, waste disposal, leaks and spills, and combustion of fuels and waste materials. Once dispersed, clean-up is rarely possible. Because many POPs are relatively volatile, their remobilization and long-distance redistribution through atmospheric pathways often complicates the identification of specific sources.

101. POPs have long environmental half-lives. Accordingly, successive releases over time result in continued accumulation and the ubiquitous presence of POPs in the global environment.

102. The primary transport routes into the marine and coastal environment include atmospheric deposition and surface run-off. Regional and global transport is predominately mediated by atmospheric circulation, but also occurs through sediment transport and oceanic circulation. Movement may also occur through a successive migration of short-range movements that result from a sequence of volatilization, deposition, and revolatilization. Due to these transport patterns and chemical characteristics, there is growing body of evidence demonstrating the systemic migration of these substances to cooler latitudes.

2. Objective/proposed target

103. The objective/proposed target is:

(a) To reduce and/or eliminate emissions and discharge of POPs that threaten to accumulate to dangerous levels in the marine and coastal environment;

(b) To give immediate attention to finding and introducing preferable substitutes for chemicals that pose unreasonable and otherwise unmanageable risks to human health and the environment;

(c) To use cleaner production processes, including best available techniques, to reduce and/or eliminate hazardous by-products associated with production, incineration and combustion (e.g. dioxins, furans, hexachlorobenzene, polycyclic aromatic hydrocarbons (PAHs));

(d) To promote best environmental practice for pest control in agriculture and aquaculture.

3. Activities

(a) National actions, policies and measures

104. Actions, policies and measures of States within their national capacities should include:

(a) Development, compilation and maintenance of inventories of point-source releases of POPs, identification and assessment of diffuse sources and sinks from which POPs may remobilize, and assessment of inputs from these sources as a basis for pollution control and prevention measures;

(b) Development of comprehensive national programmes of action for the reduction and/or elimination of emissions and discharges, and where applicable, remobilization from all significant sources of POPs, including targets and timetables and sector-specific measures for industry and agriculture:

- (i) Adoption of appropriate policy instruments—which could include regulation, economic instruments and voluntary agreements—on POPs applying the precautionary principle and the "polluter pays" principle. Priority should be given to phasing out or banning of chemicals that pose unreasonable and otherwise unmanageable risks to human health and the environment and whose use can not be adequately controlled. This can be achieved through substitution by environmentally sound substances, use of best available techniques (BAT), application of best environmental practice (BEP) and implementation of integrated pollution prevention and control (IPPC);
- (ii) Development of appropriate regulatory measures and establishment of facilities for environmentally sound collection and disposal of wastes containing POPs;
- (iii) Establishment of an environmental monitoring programme for POPs including the development of assessment criteria and the adoption of internationally accepted quality control and quality assurance procedures;
- (iv) Development of programmes to promote the informed use of substances which can result in discharges and emissions of POPs from diffuse sources, including the promotion of good agricultural practice to limit the use of pesticides to the application rates essential for crop protection, and restraint in the non-agricultural use of pesticides, especially on roads and railways;
- (v) Establishment of information services for industry and agriculture on least environmentally hazardous handling and use of POPs, and on substitutes, technology and ways and means to prevent, reduce and eliminate pollution by POPs, including best environmental practice (BEP), best available techniques (BAT) and integrated pollution prevention and control (IPPC);
- (vi) Ratification and implementation of relevant international and regional conventions and agreements;
- (vii) Ensuring the effective implementation of relevant bilateral, regional and international decisions and recommendations, *inter alia*, by:

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- a. Assessing regularly whether the national goals and measures to reduce and eliminate pollution by POPs are being accomplished;
- b. Compliance monitoring, assessing and reporting the effects of these measures; and
- c. Establishing or strengthening, as appropriate, institutions to deal effectively with the problems of POPs.

(b) Regional actions

105. Regional actions should include:

(a) Encouraging existing regional agreements and programmes of action on the prevention and elimination of pollution of the marine and coastal environment from land-based activities, to set up and implement programmes and priority measures to prevent, reduce and/or eliminate emissions and discharges of POPs and materials containing POPs from all sources. To this end, they should, *inter alia*:

- (i) Adopt targets and timetables for reduction and/or elimination of POPs releases through their substitution, and on best available techniques (BAT), best environmental practice (BEP), and integrated pollution prevention and control (IPPC);
- (ii) Adopt decisions and recommendations on the development of harmonized assessment criteria and monitoring programmes based on regionally or internationally agreed quality control and quality assurance procedures;
- (iii) Provide member States with technical information and advice regarding handling, use and disposal of POPs and their substitutes and ways and means to minimize and eliminate their release to the environment;
- (iv) Ensure transparency of the implementation of decisions and recommendations by adopting regular reporting on implementation and monitoring of measures regarding POPs; and
- (v) Assess compliance with, and the effects of, the agreed measures;

(b) Encouraging States that are not already parties to regional agreements and action plans on the prevention and elimination of pollution of the marine and coastal environment from land-based activities to join such cooperation and to cooperate on a bilateral and/or a multilateral basis in the regulation of POPs;

(c) Encouraging the strengthening of or, as appropriate, establishing regional institutions to deal effectively with the problems of POPs.

(c) International actions

106. International actions should include:

(a) Urging international, regional and subregional funding sources and mechanisms and donor countries, to ensure that the objectives, principles and measures laid down in this chapter be taken into

account when supporting projects that directly or indirectly relate to emissions, discharges and, where appropriate, the manufacture and use of POPs, as well as the clean-up and restoration of areas polluted with POPs;

(b) Encouraging international, regional and subregional funding sources and mechanisms to ensure that available financial resources are made for supporting measures to reduce or eliminate releases of POPs to the environment;

(c) Inviting appropriate international agencies and bodies to strengthen necessary information exchange, transfer of environmentally sound technology and capacity-building for the implementation of the objectives, principles and measures laid down in this chapter for the reduction and/or elimination of POPs releases to the environment;

(d) Strengthening and extending existing international quality assurance, standardization and classification mechanisms for POPs to ensure that inventories and assessments are both reliable and intercomparable. Such existing mechanisms include those co-sponsored by IOC, UNEP and IAEA under the GIPME programme, and the associated activities of the Marine Environmental Studies Laboratory in Monaco;

(e) Cooperation with countries in need of assistance, through financial, technical and scientific support, in order to reduce and/or eliminate emissions and discharge of POPs that threaten to accumulate to dangerous levels in the marine and coastal environment;

(d) Priority attention should be given to finding and introducing preferable substitutes for POPs that pose unreasonable and otherwise unmanageable risks to human health and the environment.

...

Annex

Illustrative List of Funding Sources and Mechanisms

The possible funding sources and mechanisms that may be appropriate and which will need to be considered include:

A. Financing sources internal to the State concerned

1. User charges: User charges ensure that those who benefit immediately and directly from the provision of a service contribute towards the costs of that service;
2. Charging the polluter: Those who impose burdens on the aquatic environment (for example, by discharging waste water) can be required to contribute to the external costs of their actions;
3. Local taxes: A municipality, or other organized community, that benefits from improvements in water management, can contribute to the costs of those improvements from local taxes, either by a specific tax for that purpose or by a contribution from general tax revenues;

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4. National taxes: Where the costs of some local improvement in water management would bear unreasonably on the local community concerned, or where the improvement benefits the public at large, the national budget can contribute part or all of the cost;
5. Private-sector borrowing: Where a project requires substantial initial investments, the public authority responsible can borrow the capital cost from national private-sector financial institutions, with the resulting loan-charges being serviced from any of the foregoing sources;
6. National revolving funds: A fund can be set up, financed from either any of the foregoing sources, from external financing sources or mechanisms or from a mix of any of these, from which advances can be made to finance project costs. Subsequent repayments from the projects are then used to refill the fund to permit new advances;
7. Private-sector participation: Private-sector firms can take responsibility for all, or parts, of the operation of a project instead of simply providing funds; this may involve:
 - (a) Improving and/or operating the assets necessary for a service ("the service assets"), which remain in public ownership;
 - (b) Providing and operating the service assets on their own account for a specific period, after which the assets revert to public ownership;
 - (c) Taking over ownership of the service assets and then improving and operating them on their own account, either for a specific period or permanently.

B. External financing sources and mechanisms

8. International private-sector institutions: Loans may be taken out from international private-sector financial institutions in the same way as from equivalent national institutions; in the same way, private-sector participation can equally be organized through international companies;
9. Export credit agencies: These are a source of shorter-term project financing, especially for specialized equipment;
10. Grant and concessionary assistance: Part of the costs of creating service assets or the necessary management infrastructure may be met by grants or loans, including loans of concessionary terms, from donor States or multilateral aid agencies, associations and programmes. Separate arrangements often exist to finance the acquisition of the "know-how" needed to plan and organize projects. In particular, GEF supports, by means of limited grant assistance up to the amount of the agreed incremental cost of global environmental benefits, actions consistent with its operational strategy in four focal areas: climate change, biological diversity, international waters and ozone-layer depletion;
11. Multilateral loans: The World Bank and regional development banks can provide loan finance for larger projects and technical assistance directly, and for smaller projects through financial intermediaries in the borrowing country, normally at rates lower than those obtainable on the commercial market;

12. Multilateral equity funds: Certain projects are more appropriately supported by means of equity capital than by interest-bearing loans. Where equity participation from the private-sector market is not available or not appropriate, certain public-sector financing agencies can provide support of this kind;
13. Debt-for-equity swaps and eco-conversion programmes: Creditors agree to convert the debt owed to them into local funds to be applied for environmentally beneficial expenditure;
14. Foundation grants: Many privately or publicly endowed foundations may use their resources to support innovative approaches to environmental management or the development of human resources;
15. Twinning agreements: Arrangements between authorities, either central or local, in one country and their counterparts in another, or analogous arrangements between regional seas organizations, have proved to be an important mechanism for the effective and sustained transfer of experience between parties with similar interests and concerns.

[Source: Global Programme of Action.]



Communicating with Communities

Bill Erasmus
Dene National Chief

The areas of sustainable development, contaminants, governance, and security are very important to us as Dene, as people who live close to the land. This afternoon, I will address the issue of contaminants and how this is communicated to our communities.

As Dene, we know how all parts of the environment are connected because we depend on them. We have seen many changes in our land over the years. We have especially noticed the degradation of the environment in the last few decades. The water is not as clear as when I was a child, and it tastes different. When we make tea, a scum forms that never used to. Our fish taste different; the tissue is softer and the livers of some fish have become bigger and darker. Many of our people no longer eat fish livers as they used to, even though they are a delicacy for us and very nutritious. The caribou are skinnier and taste different. Even our weather is changing; there is less snow and our water levels are much lower. The weather is not consistent. One day it is warm, the next very cold. This is not normal, and it affects the animals and us. For example, the thickness of ice changes regularly and this affects everything around us, especially the animals and those who use the ice for travel. Our people are now dealing with something called pollution. This never existed for our elders.

These changes only recently became an issue for Western scientists—since the late 1980s. Before that, many people considered the Arctic as pristine and too far away from industrial society to be affected.

Communications So Far

Our communities have been impacted by many industrial activities such as mining and oil and gas exploration. They have seen how arsenic has changed the water and fish near gold mines. They know about uranium spills along the water routes used to transport uranium for World War II activities. Recently, our communities were directly involved in public hearings on the environmental impacts of a proposed diamond

mine, the first in Canada and indeed in North America. One of the greatest concerns heard from the Dene were the impacts on three caribou herds, the Beverly/Qamanirjuag, Bathurst, and Bluenose herds. Please note that we are not directly opposed to major development, but we must make sure that development is undertaken sustainably and at the pace of our people.

Like other people around the world, the Dene are just starting to understand about the long-range transport of contaminants through air and water currents. Their increase in knowledge of the long-range transport of contaminants is due in large part to the efforts of the Arctic Environmental Strategy (AES) over the last five years. As well, the territorial government has established a committee on contaminants that assists in communicating contaminants information to all Northerners. Communication efforts have been successful because of partnerships developed with Aboriginal organizations. We know what works best in our communities; we know what questions the communities have; we are also the people who community members turn to, once government and scientists have left our home.

The AES has provided a lot of information on the results of research to the communities. Videos have been produced and many community workshops have been held to discuss these issues. However, to really understand the enormity of this problem, the challenge of communications must be dealt with on the global level.

It has been a learning experience for us all. Our communities now know more general information, such as where contaminants come from, how they enter the Arctic, and, once here, how they enter the food chain. Scientists and government officials have learned that it is a big challenge to present information to the people who their research affects the most. They have learned to use pictures, videos, and photos out of respect for our oral traditions. We ask the scientists to use terminology that is understandable and that can be translated into our five languages. We ask that results of research be presented in a way that is relevant to community members, for example, to present information on

animals and species that we eat the most and to talk about the parts of the animal that we actually eat.

One message we have heard loud and clear from the communities, particularly our "Dene scientists" or elders, is that there is not enough respect for the animals that the researchers use. Our elders encourage both Western and Dene scientists to work together more closely, to respect each other, and to respect the animals. Our communities feel that enough research has been done to establish baseline information. Future research efforts should concentrate on trends only, for example, to determine if contaminant levels are getting higher or lower. Only one or two species need be tested, not every component of the ecosystem.

The Role of the Media

A reality in the North is that many Dene learn about new information from the media, particularly radio and television. The media have reported on many issues related to contaminants. Most often they report only when the news is bad, for example, when research shows high levels of contaminants in a species or when there is a large spill of contaminants. The media do not often report on good news, such as when research shows that levels of contaminants are low. Unfortunately, this has caused unnecessary fear about the safety of our food. Community members may now be afraid to eat traditional foods. We have to reassure them that our foods are still the best to eat.

Importance of Traditional Foods

With all these reports on contaminants in our food, we realized that we needed to talk more about the benefits of traditional foods. Our elders, or our "Dene scientists," know how extremely beneficial our foods are. Even today, traditional foods provide us with most of our nutrition. The harvesting of our foods provides us with opportunities to pass our knowledge on to our children and maintain our economy. Living off the land through hunting allows us to provide for ourselves, our families, and our communities. This is important in sustaining healthy communities.

The Dene Nation and other Aboriginal peoples of the North worked together to form the Centre for

Nutrition and the Environment of Indigenous Peoples (CINE). CINE is located at McGill University in Montreal and looks at the positive aspects of our food and the way we live. The representative of the Métis Nation will talk more about CINE in his presentation.

It is vitally important that we restore the confidence that our people have had in our traditional foods and economy. We must all concentrate communication efforts on discussing the benefits of eating traditional foods, both the nutritional and cultural benefits. We must put the risk of eating traditional foods into perspective.

With the knowledge available, we understand that the *known benefits* of eating traditional foods far outweigh the *unknown risks* due to contaminants in the food. Scientists and governments must now concentrate their efforts on looking at the risks associated with eating these foods. They must look at the risks of being exposed to low levels of contaminants through diet, or "chronic exposure," and not only to high levels, or "acute exposure."

We will continue to tell our people to eat traditional foods and to keep breast-feeding our babies, and we expect others to support this message.

Summary of Recommendations

- Scientists and governments must work closely with Aboriginal peoples to ensure good communication.
- Research efforts should be directed to looking at trends and looking at risks associated with chronic exposure.
- All communications should emphasize the benefits of our food and our way of life.

Conclusion

For many of our people, any amount of contamination by manmade pollutants is too much. However, we also know that it is possible for nature to revive itself, if we stop the pollution now. Western science must accept that Indigenous peoples have vast amounts of knowledge to contribute. We must work together on

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these important issues. We must work with the rest of the world to ban the worst of the contaminants now and to continue working to find alternatives for the countries still dependent on these contaminants. Ultimately, our continued existence on this planet depends on a contaminant-free world.

We encourage you, as Arctic parliamentarians, to work with the European Commission on Economics, the United Nations Environment Programme, the Arctic Council, and other global initiatives to stop the use and production of harmful contaminants.

Closer to home, we urge Canada to recognize Indigenous land rights, including land ownership, and to settle outstanding issues with First Nations. This way we can work collectively to protect our lands, our waters, and our future.

Finally, we remind you that when you speak of contaminants in our ecosystem, you are talking about our food and our lives. Please be respectful.

Comments by Indigenous Peoples

Environmental Contaminants in the Arctic

Gary Bohnet
President

Métis Nation of the Northwest Territories

Although we have concerns relating to all the Northern environmental issues on the agenda, I will address the subject of environmental contaminants in the Arctic from our point of view.

BACKGROUND

As background, let me first state that under the Constitution of 1982, the Métis, along with Indians and Inuit, are recognized as Aboriginal Peoples of Canada.

The Métis Nation of the Northwest Territories is a political organization representing approximately seven thousand Métis people, with the majority of the membership living in the western Arctic in the following communities:

Fort Liard	Rae-Edzo
Fort Providence	Fort Norman
Fort Resolution	Aklavik
Yellowknife	Tsiigehtchic (Arctic Red River)
Fort Good Hope	Inuvik
Fort Simpson	Norman Wells
Fort Smith	Fort McPherson
Hay River	

As an organization representing the Métis people of the Northwest Territories, we have participated as working partners in many programs and research activities on the subject of contaminants in the Northern environment, as this subject is of concern to the Métis Nation of the Northwest Territories. Our concern has been translated into action through our involvement and partnerships with government agencies and under the Northern Contaminants Program under the Arctic Environmental Strategy.

RECENT EVENTS

The subject of contaminants in the Northern food chain first became an item of major concern to the Métis Nation while attending a meeting of the Northwest Territories Technical Committee on Contaminants in the fall of 1992. It was at this meeting that we learned that the results from the Slave River Environmental Monitoring Program near Fort Smith led to a Health Canada assessment warning of high levels of toxaphene in the liver of a freshwater cod known as burbot. What this meant to many people at the community level was that one of our traditionally used food items from our Northern river was contaminated and not safe to eat.

Just as our local people asked, some of you may also ask, what is toxaphene? It is a broad-spectrum pesticide in the family of human-made organic chemicals known as organochlorines or OCs. It is a mixture of more than 179 components, commercially available since 1948. It has been used to control insect

pests and in fish eradication programs. Research has shown it to biomagnify in aquatic food webs. Its use in controlling fish in Canada was discontinued by 1970, and all uses were banned in Canada in 1980. It was banned in the United States in 1983. So how did it end up in our burbot fish? We certainly did not use this chemical in our Northern waters. And if it had been banned in Canada and the United States since the 1980s, why was it showing up in 1992 in our Northern environment?

Like other OCs, toxaphene is highly soluble in fat; it is not broken down, digested, or eliminated, but tends to bioaccumulate in the fatty tissues of organisms. The liver of the burbot fish is high in fat and is the ideal organ for the accumulation of this contaminant. Further research has shown that toxaphene is still used in other parts of the world. It is arriving in the Canadian Arctic by long-range air transport from the southern United States (where it is still evaporating from the soil of cotton fields treated prior to the 1983 ban), Mexico (where it is still used), and Europe, namely the Czech Republic, Poland, Hungary, and several countries of the former Soviet Union. In other words, it is transported to our part of the world by air currents and deposited on our lakes and rivers. We are therefore victims, and I should point out that it not only shows up highest in burbot liver, but is found in ringed seals and is the most prominent contaminant in beluga and narwhals. Toxaphene has been found in Northern Aboriginal people as well, because of the heavy reliance on a traditional food diet.

To the Métis people in Fort Smith, the publication of the Health Canada assessment in the Northwest Territories bulletin called "EPI North" raised many questions at the community level. What does this mean? If burbot is not safe to eat, what about other fish? How can it be all right to eat the flesh, but not the liver? Are other traditional foods contaminated?

These grassroots concerns were launched into the political arena through a resolution at the Métis Nation's board of directors meeting in Fort Smith in February of 1993. The resolution requested a study of traditional food use in Métis and Dene communities. Such a study was also requested by the Dene Nation.

Our study, under the Northern Contaminants Program, would give us details regarding how much traditional food we were consuming, the nutritional benefits of traditional foods, and state-of-the-art research on contaminants in Northern food chains. This would give us better understanding of the benefits and risks of traditional foods.

It is fortunate that we have been able to pursue this study through the Centre for Nutrition and the Environment of Indigenous Peoples, known as CINE, with funding from the Northern Contaminants Program. CINE is an independent research centre located at McGill University that specializes in studying nutrition and the environment of Indigenous people. The Métis Nation and other Aboriginal organizations are represented on the governing board of CINE. The CINE study was undertaken with full participation at the community level to document food use in Dene and Métis communities. The study focused on the benefits and risks of current intakes of traditional and market foods. As part of the study, a strategy was developed whereby this information could be returned to the communities in a meaningful way. The results are just now being prepared for release to the communities.

CURRENT SITUATION

To return briefly to other details of the Northern Contaminants Program under the Arctic Environmental Strategy, I should point out that the Métis Nation (along with other Northern Aboriginal organizations) is involved with the program at a number of levels. The Métis Nation is represented on two committees: the Science Technical Committee and the Science Managers Committee. The Science Technical Committee reviews proposals for research and decides on the content and technical merit. This allows us to have input at the research level. Many of our partners on this committee are some of Canada's leading scientists in the field of environmental contaminants. The Science Managers Committee sets funding envelopes and gives funding approval to research projects in such categories as sources, pathways, and fate; ecosystem uptake; human health; education, communications, and community-based strategies; and international activities.

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Apart from being involved in the Northern Contaminants Program at the administrative decision-making level, the Métis Nation of the Northwest Territories has been funded for specific program delivery by undertaking two projects.

Since 1992, the Métis Nation of the Northwest Territories has been involved in an ongoing project to develop educational materials on contaminants in northern Canada. This project has produced an overview booklet, which has been distributed to you at this meeting. You will note that it is illustrated and written in plain, easy-to-understand text. We have also produced a series of school books for Grades 7 to 9 that puts the contaminant issue in a Northern context and provides classroom materials that integrate fully with existing school curricula. Programs for high school and adult education are also under development.

Our second project was a contaminant workshop held at the Métis General Assembly at Hay River in July 1995. The purpose of the workshop was to determine what people want to know at the community level. The workshop was attended by seventy registered delegates representing seven thousand Métis people from the fifteen community-based locals in the western Arctic.

Most of our delegates saw the need for ongoing work in the area of environmental contaminants, as well as the development of meaningful dialogue between researchers and the community. Schools and the education system were also seen as a target audience for distribution of the results of the Northern Contaminants Program.

It is our hope that through both of these projects Northern people at the community level will be provided with the appropriate skills and information to make their own informed decisions with regard to the level of contaminants in the Northern food chain.

CONCLUSIONS

The Métis Nation has always played a considerable role in the development of the Northwest Territories as we know it today. Respect for the environment and

education are areas of priority concern for Métis. The Arctic Environmental Strategy/Northern Contaminants Program (AES/NCP) provided an opportunity to address both these areas of concern. The issue of contaminants affects everyone in northern Canada without regard for political boundaries or ethnic origin. The Métis Nation of the Northwest Territories is proud to have undertaken initiatives to educate and promote understanding of this environmental issue for all Northerners. However, it is imperative that our own politicians support our efforts in the international arena to bring about changes in the worldwide use of substances that have the potential to contaminate our Northern food chains.

It is of vital importance that international politicians, as represented at this conference, also hear our message. If contaminants continue to come to the North, the risks from contaminants will slowly increase. Unless this is stopped, at some point in the future the risks from contamination could get so high that they would be detrimental to our health. We must all be diligent to make sure that this does not happen.

Subjects like this certainly raise many questions at the community level. To date we have been able to explain to our membership that when Canada, along with seven other Nordic nations, signed the Arctic Environmental Protection Strategy (AEPS) in 1991 in Inuvik, there was hope that it would act as a vehicle for the application of sustainable use and ecological protection in the Northern environment. To people in our communities, this means international negotiations to reduce global use of contaminants such as toxaphene to protect our traditional foods.

Treaties, agreements, and conventions can be effective methods of change. It is hoped that other countries can take our concerns seriously, not just our circumpolar neighbours.

In closing, I want to emphasize that there must be international recognition that people in northern Canada are still very dependent on traditional foods and that confidence in this natural food supply needs to be restored. We are very serious about protecting in every way possible our way of life and our economic dependency on the natural resources of the land. We

are equally serious about supporting those Northerners who earn part or all of their living from our land and use the food from the land during traditional pursuits such as hunting and trapping.

If any of you have doubts about how serious we are, I would refer you to the efforts taken by the governments of Canada and the Northwest Territories and by various Aboriginal organizations to protect our trapping and fur economy from the effects of the European Union's regulations. I certainly note that these appear to be such delicate subjects that trapping and issues pertaining to fur are not even an official agenda item at this meeting. I must let you know that am not impressed by this.

To illustrate the serious nature of the Métis Nation's efforts, I draw your attention to the headline in the current edition of our newspaper, *On the Trapline*. You will note that the Netherlands has acted against the orders of the European Commission, which delayed implementation of the EU regulation until January 1, 1997. The Métis Nation of the Northwest Territories has therefore taken the Netherlands to court over its stance on the wild fur ban, and a hearing has been set for the very near future.

In conclusion, I would just like to encourage the participants of this conference and leave them with a Northern saying: "It is easy to talk the talk, but it is a lot more difficult to walk the talk."

Statements

Sweden

Carl G. Nilsson

As we know, the Arctic is not only nature but also a territory enormously rich with resources. What united Arctic parliamentarians' great interest was their priority of careful preservation of Arctic nature. At the same time, we wish to acknowledge evolution and progress in industrial development, employment, and

international cooperation with regard to sustainable development. The need for action by parliamentarians springs from the possibility of conflicts of interest with regard to future development. A balance must be struck between the need to protect the vulnerable Arctic environment, on the one hand, and the special interests of the Indigenous peoples, on the other, while taking into account all aspects or processes of achieving development in the region.

As Ms. Birgitta Dahl said this morning, we must be fair to the future and we must be fair to nature itself where the species of fauna and flora have their own right to survival. This may be difficult. For instance, in connection with infrastructure development where, in conflict, the positions taken depend on different routes. In sustainable development of the Arctic region, economic and environmental policies should be coordinated. For instance, joint environmental standards for the utilization of nonrenewable and renewable resources will give great effects, even influence global climate policies. It is important that any utilization of the Arctic's enormous natural resources, especially the handling of oil and gas resources, should be managed in a responsible manner with a minimum of damaging effects. Only then will development of the Arctic be a necessary asset to the region.

It is critically important that due consideration be given to the interests of the Arctic's permanent residents whose lifestyles are not only original but unique and ecologically consistent, such as the reindeer husbandry, fishing, and hunting culture of Greenland. Protection against unsustained development and transboundary pollution is a matter of life and death for the permanent residents and the marine and terrestrial ecosystems of the North.

The accession of the new Nordic members to the European Union has brought Arctic areas into the European Union. In the future, the European Union will supposedly play a more active part in Arctic cooperation. It is hoped that it will also become possible to use the Union's financial resources to a greater extent for the purpose of developing Arctic cooperation.

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In summing up, I suggest that this conference should stress the need for further utilization of natural resources of the Arctic region while respecting the principles of sustainable development. Our countries should ensure adequate emergency prevention against potential oil spills, for example. We should join forces to protect the Arctic against threats from unsustainable economic activity in the region and also to ensure that future development takes place in accordance with high environmental standards and resource management.



Russia

Vladimir Goman

I would like to speak briefly to the topic of problems of large-scale projects of international cooperations from the point of view of environmental security.

Russia is one of the leading northern powers in the world. Its Arctic regions, including its marine economic zone and the shelf make up approximately one-third—and where the North is concerned, more than 60 percent of—our territory. Awareness of the great significance of environmental security and the use of the resource potential of the North has been reflected in the creation in November of last year of an agency in the Russian Federation called the State Committee for Northern Problems, which has the status of a ministry in Russia, and the formation in the dumas of a new committee on northern problems, which I represent here today at this forum.

The Russian Arctic has more than 200 billion tonnes of hydrocarbons, and 8 percent of Russian and 6 percent of the world's marine products production. It is a major supplier of nickel, copper, tungsten, gold, platinum, and other minerals. At the same time, the Arctic region plays a unique role in preserving the environmental balance the world over. It is a region where global atmospheric processes take place and it is a form of filter for cleaning impure air. It is where the world applies high standards for dealing with anthropogenic activity in developing resources.

Of all the conflicts of environmental and economic issues, I think we should address large-scale ones which are being implemented in the framework of international cooperation. Above all, there are unprecedented oil and gas development projects in the Arctic regions and on the continental shelf of Russia. There is considerable development along the Volga of a nonsustainable manner. On the one hand, Western investors are interested in the huge resources in districts on the Ob River and on the shelf of the Arctic Ocean, but they are anxious over the political uncertainty and uncertainty over the rules of the game in major deals and in long-term cooperation.

We are talking here about major Russian investment projects in the near future. However, the scale of the work and the potential investment should not cast a shadow on the damage of such large-scale projects, what they can do to the natural environment. We must remember the tanker accident off the Alaskan shore and the western Siberian oil pipeline that broke. Thanks to financial support from the World Bank, an Australian–American company was able to localize an oil spill of 100 000 tonnes and keep it out of the Barents Sea. This is the first ecological result of international cooperation, and it gives us great hope for future cooperation.

Also, there is the Russian project of the World Bank which involves observation and participation of the State Duma of Russia. But, it is even more important to minimize the environmental impact of new deposits of oil and gas that are being developed to prevent these kinds of major accidents. Russia today is now beginning development of its marine deposits, and Canada and Norway have a good deal of experience which they are sharing with us. We are participating in an international project which will make it possible for us to preserve ecosystems while sustainably developing the Arctic regions.



Norway

Eirin Faldet

About a week ago, it was mentioned on a Norwegian radio program that recent British studies in the Arctic

show that the Arctic is now as polluted as Europe was one hundred years ago. High concentrations of mercury in the livers of fish were found; as well, PCBs and insecticides were identified in the region. The studies underlined that the wind takes toxic air from northern Europe to the Arctic, and that there is nothing people in the North can do about it. It was further stated that the Arctic is not seriously damaged yet, but it is slowly changing. The following conclusion was drawn from the studies: We should take these signs seriously and prepare to deal with the underlying problems.

These results should give all of us some serious thoughts. We should, at the same time, stop the pollution of the vulnerable Arctic environment and also have economic development for the people living in the region. This will require both national and international action.

Last autumn, the Norwegian parliament discussed a white paper submitted by the government concerning the protection of the environment of Svalbard. The white paper focused on protection of the cultural heritage of the archipelago, on increasing tourism, and on problems concerning Longyearbyen, as it has now become a local community with a much greater diversity of economic activities than before. A minor part of the white paper dealt with external influences, meaning persistent organic pollutants from ships around Svalbard and the different elements concerning a possible climate change. It seems that Svalbard somehow is more polluted than other Arctic regions. For instance, there have been found to be six times more PCBs in polar bears in Svalbard than in Alaska and three times more than in polar bears Canada. One explanation may be special ocean and air currents and their transportation around Svalbard or industrial contamination in Svalbard.

In the paper submitted to us, the author has thoroughly described the nature of the problems and he has proposed certain solutions. It is easy to agree in principle to the proposals, but implementing is somewhat different. The Norwegian case shows strong will to show the local problems according to Norwegian laws and, at the same time, develop the economic activity in a sound environmental direction.

But when it comes to problems like climate change and environmental contaminants in the long term, solutions must be found on an international level, even beyond the eight Arctic states.

We know that pollution does not stop at any border. Therefore, we have to solve these problems together. We are all responsible.



Iceland

Ólafur Örn Haraldsson

What seems very important to me and the Iceland delegation is the establishment of an integrated monitoring system in the Arctic region. When I say that, I am talking about monitoring the situation by observing it—but not only that—and being active so governments can react to the results that are found in the research that is done.

Research is a very important issue in our near future, and I would like to emphasize that the methods we use must result in compatible data. I would also like to emphasize quality assurance in this research. I see this as one of the main tasks of the Arctic Council when it starts its important work.

But we are dealing not only with environmental problems. We should also focus our attention on cooperation in using natural resources. When I say that, I mean animals, both fish and mammals, and also oil and minerals in the Arctic region. At the same time, it is important and evident that we must take advantage of and cooperate with economic development in this area and cooperate with the growth of industry in the relevant countries.

In Iceland, of course, we have our problems. I am not going to take much time to go into them, although I would like to say that we see in the near future that we should be able to use our resources in a sustainable way. At the same time, we realize the incoming threat of pollutants, including POPs and heavy metals. It is very important that we work on an international level, that we respect international agreements, and that we also

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respect the people who would like to help themselves by putting up a program of capacity building.

I would like to bring up an aspect here that has not been mentioned very much, that is, the public of the countries in the polar region. We have been talking about governments and parliamentarians and parliamentarians participating in the Arctic Council, but I would like to draw attention to the public. I think we should have the public with us, strengthening values and environmental awareness, and accept that the public has the right to know.

Tomorrow, when we talk about the next actions in the Arctic Council, I would like to comment on a few points, but I think it is very important that we move from talking in that area to action.



Finland
Pehr Löf

The consumption of global resources and the pollution of the earth are questions about the future for our children and grandchildren in the Arctic region and all over the world. Study of the effects on nature, climate, and human beings in the vulnerable Arctic region will give all the civilized world important signals about the dangerous consequences of the modern lifestyle. This is the experience I had while reading the background papers for this conference, and even more now when I have heard the talks today.

I am a physician in my civilian life. A physician's duty is to maintain life and by means of medical care improve the quality of life for the living and sometimes for unborn people. But as a medical doctor, I soon found out that people's well being is much more dependent on lifestyle and environmental circumstances than on medical care. That is why I am now a politician.

Politicians usually promise and, hopefully, want to make decisions leading to maximum quality of life, which in the industrialized world means guaranteeing a good income for everybody, which also means consumption of nonrenewable global resources, at the

same time polluting nature and organisms with all the toxic agents we have heard about today. We have to accept this reality to a certain degree; development cannot be stopped at once.

But thinking again of our children and grandchildren, I ask: Does the quality of life mean taking care of the state debt by every means, or prevention of the greenhouse effect and actions against persistent organic pollutants? We know now for sure the effects of the rising carbon dioxide levels in the atmosphere. Are we ready to sacrifice the loss of a lot of the Arctic species of flora and fauna? Are we ready to accept the loss of the warm gulf stream in the Nordic countries?

In my opinion, the most dangerous contamination in all the world is the greater and greater release of carbon dioxide to the atmosphere by burning fossil fuels. We must do all we can to get all the states to accept and follow the Rio treaty concerning carbon dioxide discharge. This is a question of the future for the Arctic region and for the whole world. Only by showing action against the greatest pollution threat can we also act against other contaminants.



Greenland
Martin Glerup

We must realize that these problems are not only Arctic problems, but global problems as well. In the Arctic, as in many other places, we can find the problems caused by unsustainable behaviour, producing all the things we cannot live without. The environmental stress caused by human activities is a growing problem while we are making speeches. Sometimes we even make good laws and form strategies against pollution. Many countries have signed the agenda from Rio and other important conventions too, although it is a fact that we have met very little success in obtaining and implementing all the good objectives.

The gap between what we are saying and what we are doing is still too big. We need to reject many toxic and polluting products and not export these things from developing areas in the world. We need a more

persistent struggle against persistent organic pollutants, including pesticides, heavy metals, and POPs. We need to usurp the threat against our climate caused by carbon dioxide, the greenhouse effect, and the erosion of the ozone layer caused by CFC gases. These things affect the environment and health of many thousands of people, for instance, in the Arctic area. Countries in the Nordic part of the world can play a valuable leadership role through our good examples and efforts to promote efficient international laws, agreements, and strategies to prevent pollution from POPs, heavy metals, and all threats to the global environment. We politicians have an obligation to make common sense more common, as our friend from Iceland said.



Denmark
Hans-Pavia Rosing

Keeping close attention to the pollution of the Arctic is of utmost and urgent importance. This is a field where not only Arctic cooperation but international cooperation is inevitable, and other speakers have said the same. We must engage and apply ourselves and each other to a binding strategy, an actual plan to remove the sources of Arctic contaminants. We have different ways to do this. We were told today that Canada has its own domestic Arctic environmental strategy. The Nordic Council, the Nordic countries, have an Arctic environmental strategy, and the Circumpolar Conference was one of the first organizations, if not the first organization, to develop an Arctic environmental strategy. In Greenland, we have a comprehensive law for protection of the environment.

Traditional foods have been talked about by commentators. It is a very important part of the culture of the Indigenous peoples of the Arctic. We have species in the Arctic that may seem very exotic to southerners—like whales, seals, caribou, etc.—and these animals form a vital part of our diet that we could not be without. The key word here is action if our future generations shall be able to enjoy the magnificent nature of the Arctic and what Mother Nature can provide. Traditional knowledge combined

with contemporary science and technology are ways to a solution of what we regard as one of the biggest challenges for the next decade.

I would like to say a few words on the issue we explored this afternoon, the leghold trap issue. It is an issue that I have been dealing with for quite a number of years, and it is a European Union initiative to have a regulation on the import of wild fur trapped with leghold traps. It might be a little easier for me because Greenland withdrew its membership from the European Union ten years ago, while other countries like Sweden and Finland have just joined the European Union. We are supportive of the cause of the people here because it is a livelihood that is important for this part of the world and for other Arctic areas. I, personally, communicated with the commission and the parliament for the past many years and the commission decided recently to postpone the regulation from going into effect for one year, until the first of January 1997.

I think it is important that we are aware of the sad consequences of this issue for the trappers, people, and families of the Arctic. I think most people here remember the so-called baby seal clubbing off Newfoundland that had very drastic consequences for Greenlandic hunters. The fur issue is certainly a vitally important issue for many, specifically in this area where we are meeting. Without going into detail, if you did not know, there is an exhibition of films on this issue that are very interesting. I think this issue shows a need for an Arctic Council, for a forum, where the level of knowledge throughout the circumpolar area will be raised, hopefully, and action can be taken on issues that have great importance to the people of the Arctic and sub-Arctic. We have ways in communication and technology today to act as one throughout the circumpolar area, including on this issue.



Canada
Keith Martin

Ecosystem integrity is embodied in our vision of sustainability, and we feel the issue of contamination threatens the Arctic ecosystem and is a critical issue.

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We feel that the most immediate concern is the vulnerability of the Arctic ecosystem and the Indigenous peoples, as Indigenous peoples are tied to the Arctic ecosystem through their culture and their food source—country foods being an integral part of their cultural identity.

We know that over the past fifty years the Arctic ecosystem has been subjected to increasing inputs of environmental contaminants, including persistent organic pollutants (POPs), heavy metals, radionuclides, acid deposition, and petroleum hydrocarbons. Among metals, mercury is of special concern, as has been mentioned before, because of its rapid increase, biomagnification, and the already high level in human populations.

We know that these substances have been detected throughout the Arctic ecosystem in air, soil, snow, ice, animals, plants, and humans; that many of these substances are accumulating at the higher levels in the food chain, including humans; that many of these substances have been shown to cause potential irreversible harm to human health and the environment; that the Arctic ecosystem is particularly sensitive to contamination by such toxic substances; and that these substances persist in the Arctic environment for long periods of time and bioaccumulate in the Arctic food chain.

It is now recognized that many of the contaminants present in the Arctic have cumulative and synergistic effects on animals'—including humans'—endocrine, immune, and reproductive systems, and further, that these effects may be carcinogenic and teratogenic.

We know that most of these substances originate from anthropogenic activities in industrialized and agricultural regions far removed from the Arctic and are transported over long distances into the Arctic via wind, air, and water currents.

We feel strongly that this underlies the inherent inequities and complexities of social, political, and economic relationships among countries and cultures.

We believe that current national, regional, and international legal instruments are generally not

adequate to ensure the continued protection of the fragile Arctic's ecosystem, including its peoples, from environmental contaminants.

We recognize the need for a strong base of scientific knowledge. Recognizing the precautionary principle and the invaluable contribution of traditional ecological knowledge, we therefore recommend a coordinated circumpolar research effort into the role of the Arctic ecosystem in global processes based on the integration of modern scientific methods and traditional ecological knowledge. We also recommend that continued research efforts be directed at the contamination of country foods and the potential impact on Aboriginal populations.

We recognize that there are many programs and initiatives already under way to effectively manage and control contaminants globally. We therefore support the efforts and valuable contribution to this issue by the working groups of the AEPS and believe that the Canadian Arctic Contaminants Assessment Report, which represents Canada's contribution to the AEPS, and the Arctic Monitoring and Assessment Program (AMAP) will substantially add to the knowledge base.

We also support and recognize the valuable work on this issue that Canada has contributed through the United Nations Economic Commission for Europe (UN ECE), the executive body to the Convention on Long-Range Transboundary Air Pollution.

We support the continuing cooperative initiative on the development of protocols under this convention for POPs and heavy metals. This is just one instrument through which immediate action on POPs is possible.

We support the United Nations Environment Programme (UNEP) initiative to develop a global strategy for POPs and the Washington Declaration on the Protection of the Marine Environment from Land-based Activities including POPs, and recognize that a global strategy does not preclude regional action.

We strongly encourage all countries to continue to support their essential programs on contaminant research and monitoring and reconsider those

programs that are to be phased out. Canadian programs of great interest are the activities coordinated under the Northern Contaminants Program of the Arctic Environmental Strategy, the Canadian programs and activities within the Arctic Environmental Protection Strategy, and the globally recognized work of the Freshwater Institute.

We support continued and additional efforts to find effective ways to manage and control contaminants globally.

This is a global problem which requires the will to formulate global solutions.

We urge all governments to incorporate the issues of long-range transboundary atmospheric pollution into all negotiations of national and international agreements.

Therefore, we recommend that pollution prevention form the basis of our management strategy to eliminate contaminants from all ecosystems.

In order to achieve pollution prevention, we recommend the following actions:

- that a concerted effort be given to current national, regional, and international legal instruments to ensure the continued protection of the fragile Arctic ecosystem, including its peoples, from environmental contaminants;
- that there be a review of the State of the Arctic Environment Report and the Arctic Assessment

Report prior to the next ministerial AEPS meeting and that the third conference of parliamentarians review the results and conclusions of these reports;

- that a circumpolar state of the environment report be prepared which fully utilizes traditional ecological knowledge;
- that a coordinated effort be given to the recognition of the global dimensions of the contaminants problem, including global contaminant change and stratospheric ozone reduction;
- that management strategies developed for contaminants reflect the realities and complexities of the issues;
- that collaborative attention be given to the social, economic, political, and legal considerations that significantly influence the generation, use, release, and, ultimately, the management of environmental contaminants in different regions of the world;
- that we recognize factors such as infrastructure, institutional capability, information availability, technology development, and the financial costs which are associated with control measures and how these are important determinants which vary around the world;
- that we recognize that factors are often interrelated and interdependent and are influenced by other considerations, such as climate, local geographic conditions, and societal values.

Theme III:

Challenges for Arctic Governance

Background Paper

Arctic Governance: Meeting Challenges of Cooperation in the High Latitudes

Oran R. Young
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1.0 INTRODUCTION

Long dismissed as a frozen wasteland of interest only to a handful of Indigenous peoples, explorers, traders, missionaries, and scientists, the Arctic has emerged over the last decade as a prominent region in international society with a distinctive political agenda and a constituency of its own. As prospects of cultural, economic, environmental, and political benefits and losses have risen in the high latitudes, so too have the incentives of all Arctic stakeholders to devise ways to cooperate with one another. It would be pointless and wasteful for people in different parts of the Far North to attempt to solve the same problems without profiting from each other's experiences. Increasingly, moreover, Arctic problems transcend jurisdictional boundaries, so that they cannot be addressed effectively in the absence of sustained international cooperation.

We stand today at the threshold of a new era in Arctic international relations. Recent developments, including intergovernmental initiatives (e.g., the Arctic Environmental Protection Strategy), subnational initiatives (e.g., the Northern Forum), and nongovernmental initiatives (e.g., the International

Arctic Science Committee), have generated a sense of momentum regarding the evolution of multilateral arrangements intended to institutionalize cooperation among Arctic stakeholders. Some of these developments, like the Barents Euro-Arctic Region and the North Atlantic Marine Mammal Commission, are subregional in scope. But more and more, the Arctic as a whole is gaining prominence as a policy-relevant region. Under the circumstances, it is important to think carefully about the options available to those who will be responsible for designing and managing expanded, or even entirely new, forms of Arctic cooperation in the future.

To set the stage for tackling these issues, this essay begins with some general observations about governance in international society and about the emerging role of the Arctic in world affairs. The heart of the essay comprises a detailed analysis of governance challenges facing the Arctic at this juncture and an examination of the options available to those responsible for meeting these challenges. The goal is to frame the issues and to assess alternatives available for dealing with them rather than to provide a simple blueprint for those concerned with institutional issues in the high latitudes. For ease of exposition, the issues and options are clustered into eight groups: (1) forms of cooperation, (2) functional scope, (3) generative concepts, (4) institutional tasks, (5) structures of representation, (6) organizational needs, (7) top-down/bottom-up balance, and (8) global connections.

2.0 GOVERNANCE IN INTERNATIONAL SOCIETY

Governance arises as a matter of public concern whenever the members of a social group find that they are interdependent in the sense that the actions of each individual member impinge on the welfare of others.

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Interdependence gives rise to conflict when the efforts of individuals to achieve their goals interfere with or thwart the efforts of others to pursue their own ends. It emerges as a basis for cooperation, on the other hand, when opportunities arise to enhance social welfare by acting to coordinate the activities of the individual members of the group. More generally, interdependence gives rise to interactive decision making and generates the potential for collective-action problems in which individual actors, left to their own devices in an interdependent world, produce collective outcomes that are inferior to other feasible outcomes for all parties concerned. Well-known examples of this social pathology at the international level include arms races, trade wars, and tragedies of the commons. The higher the level of interdependence among members of the group, the more pervasive and complex these collective-action problems become.

At the most general level, governance is a social function centred on the establishment and operation of institutions or, in other words, constellations of roles, rules, decision-making procedures, and programs that serve to define social practices and guide the interactions of those participating in them. Such institutions may address a wide range of issues. But politically significant institutions are arrangements designed to solve or manage social conflicts and enhance social welfare or, in other words, to alleviate collective-action problems in a world of interdependent actors. Governance, on this account, does not presuppose the need to create organizations or material entities to administer the social practices that arise to handle the function of governance. The burden of proof may actually reside with those who maintain that the establishment of new organizations is needed to achieve these ends. The operation of any organization is costly, both in material terms (e.g., the funding required to maintain offices and pay staff) and in terms of less tangible values (e.g., the bureaucratic inefficiencies and the restrictions on individual liberties imposed by even the most enlightened administrative arrangements).

Approached in this way, the initially counterintuitive distinction between governance and government and the growing interest in the idea of "governance without government" become clear. The key issue for

those of us interested in this distinction concerns the role that social institutions, in contrast to organizations, play in solving or managing collective-action problems currently rising to the top of political agendas in a variety of settings. The general proposition that groups of interdependent actors can and often do succeed in handling the function of governance without resorting to the creation of elaborate organizations or governments in the conventional sense is now well established. The literature on common property arrangements operating in small-scale, stateless societies, growing rapidly in recent years as a counter to the intuitively appealing but empirically tenuous notion of the "tragedy of the commons," bears this out. Today, leading students of governance are busy exploring the conditions under which governance without government can succeed and asking whether we can scale up from findings derived from a study of small-scale systems, rather than prolonging unproductive debates about the need to establish formal organizations to solve an array of collective-action problems.

The point of drawing a clear distinction between social institutions and organizations, however, is not to abandon the idea that formal organizations can and often do play important roles in coming to terms with the agenda of governance problems arising in the world today. On the contrary, the introduction of the distinction opens up a major research agenda for students of governance. What roles can organizations perform in creating social practices designed to allow groups to avoid or solve collective-action problems? When can the resultant institutions operate successfully without the aid of organizations to administer their provisions? When organizations are needed, how can we design appropriate arrangements well-tailored to the roles they are expected to play in connection with specific institutions? Answers to these questions will carry us a long way toward developing the intellectual capital needed to meet today's challenges to our capacity to deal with problems of governance in regions like the Arctic.

Recent work on challenges of governance in international society centres on the study of issue-specific regimes consisting of agreed-upon principles, norms, procedures, and programs that govern the

interactions of stakeholders affected by relatively well-defined collective-action problems. For the most part, the formal or official members of these regimes are states, although it is increasingly apparent that a variety of nonstate actors play influential roles both in the formation and in the operation of international institutions. Thus, we speak of the international trade regime resting on the General Agreement on Tariffs and Trade (GATT) together with the more recent agreement establishing the World Trade Organization (WTO); the regime for Antarctica and the Southern Ocean comprising the several components of the Antarctic Treaty System; and the ozone regime consisting of the 1985 Vienna Convention together with the 1987 Montreal Protocol as amended in London in 1990 and in Copenhagen in 1992. As these examples suggest, international regimes can and often do vary substantially in terms of membership, functional scope, geographical domain, degree of formalization, and stage of development. Yet most regimes rest on one or more (not necessarily legally binding) constitutive documents, and all successful regimes feature a convergence of expectations on the part of their members regarding appropriate standards of conduct in the relevant issue area.

International regimes are similar to institutions operative in other social settings in most respects. Yet it is worth noting at the outset that such regimes are not about property rights in the ordinary sense of the term. The essential point in this connection flows from the distinction between *imperium* and *dominium*. States—like other collective or corporate entities—can and often do become owners of real property, including land and natural resources. In some countries, the state holds title to the great majority of the land and associated natural resources. Even in the United States, where the prevailing political culture emphasizes the virtues of private property, the federal government alone owns about a third of the country's land base. In their role as the principal members of international society, however, states are concerned primarily with the entitlements of public authority or, in other words, sovereign rights (i.e., *imperium*) in contrast to the entitlements of ownership or property rights (i.e., *dominium*). By exercising their sovereign rights, states can place restrictions on the activities of holders of property

rights and, in extreme cases, act to rearrange the bundles of rights available to property owners. For the most part, by contrast, holders of property rights have no such capacity to influence the exercise of sovereign rights.

It follows that international regimes, like those established under the Convention on Long-Range Transboundary Air Pollution (LRTAP) and its protocols or the Convention on International Trade in Endangered Species of Fauna and Flora (CITES), are properly understood as constellations of roles, rules, and relationships designed to bring order into the interactions of sovereign states rather than as constellations of entitlements intended to bring order into the interactions of property owners. Even so, the similarities between international regimes and institutional arrangements operative in other social settings are sufficiently strong to make it illuminating to compare and contrast these mechanisms for coming to terms with collective-action problems systematically.

3.0 THE ARCTIC IN WORLD AFFAIRS

Throughout much of the recent past, the Arctic has been written off by those interested in institutionalizing international cooperation, and for two distinct reasons. The barriers to sustained cooperation associated with the rise of the Soviet Union and the eventual onset of the cold war are well known. The East–West confrontation effectively split the Arctic, with the Soviet Union controlling almost half the region on one side and the United States linked with Canada, Denmark, Iceland, and Norway as NATO allies on the other. What is more, the Arctic emerged during several phases of the cold war as a major arena for the deployment of manned bombers equipped with long-range cruise missiles and nuclear-powered submarines carrying strategic weapons, a fact that gave the region a high profile as a factor in the global strategic balance. With few exceptions, efforts to launch regionwide initiatives aimed at the creation of multilateral regimes could not flourish in this environment. For the most part, no one even tried to pursue such objectives.

The other, somewhat less obvious, impediment to international cooperation in the Arctic arose from the

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prominence of core/periphery relations in the region. With the exception of Iceland, the lands and natural resources located in the circumpolar north are sparsely populated hinterlands firmly attached to advanced industrial societies whose metropolises lie well to the south. Thus, Alaskan developments reflect policies articulated in Washington; Greenlandic developments are affected by policies set in Copenhagen; developments in the North Calotte follow policies adopted in Helsinki, Oslo, and Stockholm; and developments in the Russian North are heavily influenced by policies devised in Moscow. Given this fact, coupled with the attractions of the high latitudes as politically secure sources of valuable raw materials, including world-class reserves of oil and natural gas, it is hardly surprising that political relationships in the Far North have long run along north-south lines and that international relations have constituted a secondary concern throughout much of the Arctic. What is remarkable are the extremes that this pattern has reached in many areas. It is a striking fact, for instance, that those wishing to travel from Fairbanks to Yellowknife must go south as far as Seattle and that those desiring to travel from North America to Greenland generally find it necessary to go by way of Copenhagen.

Interestingly, there is a history of innovative and effective experiments with sustained international cooperation in the high latitudes stretching back to the beginning of this century. The four-nation Convention on North Pacific Fur Seals signed in 1911 capped a complex interaction among Great Britain (on behalf of Canada), Japan, Russia, and the United States spanning a quarter of a century and involving international arbitration as well as physical clashes. The resultant regime, which banned pelagic sealing, is credited with playing a key role in rebuilding fur seal populations and was long regarded as a model in efforts to deal with problems of wildlife management at the international level. The Treaty Relating to Spitsbergen, signed in 1920 as an element in the overall peace settlement following World War I, created an international regime for the Svalbard archipelago that remains in force today. In its provisions mandating demilitarization of the archipelago and establishing a system of restricted sovereignty in the area, this regime has served as a

model for more recent arrangements, including the regime for the south polar region set forth in the Antarctic Treaty of 1959. Even after the onset of the cold war, efforts to devise new international regimes dealing with Arctic matters did not come to a complete halt. In 1973, for example, the five range states—Canada, Denmark, Norway, the Soviet Union (now Russia), and the United States—negotiated an international agreement on polar bears. This arrangement, generally regarded as an important factor in ensuring the welfare of polar bear stocks throughout the Far North, remains a vital force today.

Sometime during the late 1980s, the chilling effect of the cold war on international cooperation in the Arctic began to wear off. In fact, tentative steps confined largely to bilateral arrangements began a decade earlier. Prominent examples include the 1978 Grey Zone Agreement in which Norway and the Soviet Union devised a mechanism for managing the living resources of the disputed area of the Barents Sea; the 1981 Jan Mayen Agreement in which Iceland and Norway created a joint development zone for the marine area lying between Iceland and the Norwegian island of Jan Mayen; and the 1983 Marine Environmental Conservation Agreement in which Canada and Denmark established procedures to protect the ecosystems of the Davis Strait/Baffin Bay area in the event of increased commercial navigation in those waters. But as the decade of the 1980s drew to a close, a watershed change occurred with regard to international cooperation in the Arctic in which a trickle of bilateral initiatives gave way to a flood of broader multilateral initiatives. Although there is an element of arbitrariness in any effort to date such a dramatic change, most observers would agree that Mikhail Gorbachev's well-known "Arctic zone of peace" speech, delivered in Murmansk on 1 October 1977, effectively marks the onset of this new era in Arctic international relations.

What has emerged in the aftermath of this change is a remarkably diverse collection of multilateral regimes dealing with various aspects of Arctic affairs, not to mention an even larger set of bilateral arrangements. The International Arctic Science Committee, founded in August 1990, is a nongovernmental organization whose members are national science organizations in

the eight Arctic states—Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden, and the United States—as well as in seven other countries possessing long-term commitments to Arctic research. The Northern Forum, initiated in September 1990 and launched officially in the fall of 1991, is an organization whose membership consists of subnational units of government—states, provinces, counties, autonomous regions, oblasts, and so forth—which have common interests especially as representatives of Northern hinterlands seeking to deal with distant metropolises. The Arctic Environmental Protection Strategy is an intergovernmental arrangement created by the eight Arctic states—now known as the Arctic Eight—in June 1991 to deal with "threats to the Arctic environment and the impact of pollution on fragile Arctic ecosystems."

The Arctic Leaders' Summit is an alliance of Indigenous peoples, including the Inuit of the North American Arctic, the Sami of northern Fennoscandia, and the Indigenous minorities of the Russian North, formed at a meeting of Aboriginal leaders in June 1991 to protect and promote the interests of the Arctic's permanent residents. The North Atlantic Marine Mammal Commission, created under the terms of an agreement signed in April 1992, is a mechanism through which the Faeroe Islands, Greenland, Iceland, and Norway—Canada, Japan, and Russia have participated as observers—have sought to protect themselves against the impact of actions taken by the International Whaling Commission and, more generally, to promote the use of marine mammals in the North Atlantic area on a sustainable basis. The Barents Euro-Arctic Region, inaugurated in January 1993, is an arrangement whose principal members—Finland, Norway, Sweden, and Russia—are motivated by a desire to reintegrate Russia into Europe on a constructive basis and to strengthen the socioeconomic fabric of Europe's northernmost region without sacrificing the area's environmental quality.

4.0 OPTIONS FOR ARCTIC GOVERNANCE

Taken together, these developments have generated a sense of exhilaration among those interested in the international relations of the Arctic. What was until

recently a region in which international concerns typically focused on the deployment of strategic weapons systems and on efforts to find ways to allow related Indigenous peoples to interact across national boundaries has become a dynamic arena in which a wide range of cooperative initiatives have emerged in rapid succession. At the same time, there is an understandable feeling in some quarters that the emerging mosaic of arrangements dealing with specific Arctic issues is incoherent and inefficient. As early as November 1989, Canadian prime minister Brian Mulroney identified this concern and proposed consideration of a broader, more encompassing Arctic Council that would be able to consider the full range of Arctic issues and sort out the growing array of Arctic initiatives in the interest of building a coherent structure of international cooperation in the region.

Although those concerned with more immediate projects set aside this Canadian initiative for several years, the idea received fresh impetus in February 1995 when American president Bill Clinton and Canadian prime minister Jean Chrétien issued a joint statement endorsing the establishment of the Arctic Council. This action triggered several rounds of preparatory discussions during the remainder of 1995 focusing on the structure of the proposed council and, increasingly, on the provisions of a ministerial declaration expected to set forth the terms of the council's constitutional contract. At this writing, it is anticipated that such a declaration will be signed sometime during 1996, possibly in Canada during June, although a number of substantive concerns pertaining to the council's institutional character have arisen that were not foreseen in the immediate aftermath of the Clinton/Chrétien communiqué. All this makes it timely to take a systematic look at the institutional issues and options that have emerged in the Arctic today. What follows is a range of considerations, clustered into eight groups, that deserve careful attention on the part of those involved in the effort to form a more substantial or comprehensive regime for the Arctic as a whole.

4.1 Forms of Cooperation

Most participants in the discussions regarding the creation of an Arctic Council have simply assumed

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that the agreement establishing the council will take the form of a ministerial declaration or, in other words, a formal agreement, but one that is not legally binding on its signatories. It is not difficult to locate the sources of this presumption. Recent Arctic initiatives, like the 1991 Rovaniemi Declaration creating the Arctic Environmental Protection Strategy and the 1993 Kirkenes Declaration establishing the Barents Euro-Arctic Region, feature soft-law arrangements. Even more to the point is the common and probably accurate belief that an international convention or treaty dealing with a range of Arctic issues would stand little chance of ratification by the U.S. Senate. The recent success of the Republican Party in gaining control of the Senate, together with the succession of an archconservative to the chairmanship of the Senate Committee on Foreign Relations, simply reinforces this assessment. Political pragmatism, then, seems to call for a reliance on soft-law arrangements as the only realistic option for institutionalizing multilateral cooperation in the Arctic at this time.

With all due respect to political pragmatism, however, it is worth exploring the relative merits of hard-law and soft-law arrangements as means of dealing with Arctic issues during the foreseeable future. Many observers, struck by the apparent success of the Antarctic Treaty System in meeting the challenges of governance in the south polar region, argue that the long-term goal in the north polar region should be the development of an Arctic treaty system that resembles the Antarctic regime. Others, especially those who follow Arctic affairs on behalf of various nonstate actors, present a more substantive argument regarding the merits of working toward a hard-law regime for the Arctic. The core of this argument is the proposition that both the governments of member states and other actors operating under their jurisdiction are more likely to comply with the provisions of hard-law in contrast to soft-law agreements. Some commentators attribute this to the fact that ratification is often followed by the passage of implementing legislation, a process that makes it possible to use domestic fora to bring legal as well as political pressure to bear on government agencies and nongovernmental organizations to comply with international commitments. Even in the absence of formal implementing legislation, on this account, actors are more likely to comply with the

terms of legally binding commitments than with the provisions of soft-law agreements. In part, this is a consequence of administrative procedures relating to implementation that are often triggered by the acceptance of international commitments that are legally binding. Partly, it arises from the fact that officials, as well as private citizens, may feel a sense of political or even moral obligation regarding commitments that have the force of law which is absent with regard to soft-law agreements.

At the same time, there are arguments favouring reliance on soft-law arrangements that go well beyond the dictates of political pragmatism. The category of soft law encompasses a range of options that are by no means identical. But all such arrangements have several distinct attractions with regard to regime formation in international society. Because they know that the results will not be legally binding, parties are often prepared to accept more far-reaching commitments in the form of soft-law agreements than they would be prepared to accept as hard law. Whereas operationalization or the transition from paper to practice is commonly put off until a hard-law agreement enters into force, the process of operationalization can begin immediately after the signing of a soft-law agreement. Soft-law agreements are generally easier than hard-law agreements to adapt or adjust to changing circumstances, because such alterations do not involve formal amendments requiring ratification to enter into force. In areas that are changing rapidly, like the Arctic today, this can be a major advantage in efforts to keep regimes relevant to the circumstances at hand. Under the circumstances, it is hardly surprising that interest in soft-law regimes has risen rapidly among students of international institutions over the last several decades.

Clearly, there is no need to choose between hard-law and soft-law arrangements in any general sense. There are cases in which the exact status of an agreement with regard to this distinction is left deliberately vague, and all regimes that operate successfully over a period of time acquire an overlay of informal understandings whatever the status of their constitutive provisions. But the lesson to be drawn from the point of view of regime design concerns the importance of selecting the institutional form that is

most appropriate to the issue at hand. In cases where obtaining compliance with regulative prescriptions looms as a critical issue, it makes sense to push hard for arrangements that will trigger the passage of implementing legislation in key member states. Where circumstances are changing rapidly in ways expected to have major consequences for institutional arrangements, by contrast, the flexibility of soft-law arrangements is a major attraction. None of this alters the political realities dictating that any agreement creating an Arctic Council signed during 1996 will take the form of a soft-law ministerial declaration. Even so, it is worth bearing in mind the relative merits of hard-law and soft-law arrangements as we move toward a more comprehensive regime for the Arctic in the years to come.

4.2 Functional Scope

In the Arctic, as elsewhere, international regimes have often been framed narrowly in terms of their functional scope. Some, like the regimes for the conservation of North Pacific fur seals and of polar bears, have concentrated on a single species; the bilateral agreement dealing with the Porcupine caribou herd, which straddles the Alaska–Yukon border in the North American Arctic, covers only one stock of a single species. Other regimes overlay geographical limitations on their functional specificity. The Grey Zone Agreement between Norway and Russia deals with the fisheries of a circumscribed portion of the Barents Sea; the Marine Environmental Conservation Agreement between Canada and Denmark/Greenland focuses on the possibility of marine pollution arising in connection with ship traffic in the Davis Strait/Baffin Bay area. Yet there is nothing inherent in the idea of international governance that requires this sort of specificity. On the contrary, it is fair to say that issues relating to functional scope have become a focus of lively debate among students of international institutions in recent years; the issues raised in this debate are just as germane to the Arctic as they are to other regions.

The fundamental argument for broadening the functional scope of international regimes arises from the growth of interdependencies among human

activities that were once largely discrete and separable. In dealing with large marine ecosystems today, for example, it is hard to avoid the need to consider fishing, the harvest of marine mammals, offshore hydrocarbon development, commercial navigation, environmental protection, and even tourism and scientific research as a package of concerns all of which are capable of affecting each other significantly. The emergence of sustainable development as an organizing principle in dealing with transboundary issues, moreover, reinforces this development, since it makes no sense to pursue this goal without paying explicit attention to the links between environmental protection and a range of issues that include cultural and social as well as economic concerns. There is as well a tactical argument for expanding the functional scope of international cooperation under some circumstances. Such a move can open up new options for those engaged in institutional bargaining over the terms of international regimes. In effect, broadening the range of issues considered can increase the room for give-and-take in a bargaining process, thereby facilitating efforts to hammer out the terms of a package deal acceptable to all parties concerned.

Yet the attractions of expanding the functional scope of international regimes are not without limitations, and these concerns apply in the Arctic as elsewhere. Stakeholders who are unwilling to make compromises on a particular issue will be reluctant to throw it into the mix involved in institutional bargaining. The refusal of the United States to allow any consideration of security issues in connection with the creation of an Arctic Council, for instance, undoubtedly reflects this type of concern. Similarly, participants may fear that the bargains struck in specific instances of multi-functional negotiations will set precedents that exert a powerful influence in other settings. Whatever the merits of a broad functional scope in the case at hand, therefore, actual or perceived linkages to other cases may lead individual players to reject initiatives aimed at broadening the functional scope of an Arctic regime.

What is more, multifunctional arrangements may prove both difficult to implement and be subject to breakdown as a result of conflicts relating to individual components. The entry into force of the

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1982 UN Convention on the Law of the Sea, for example, was delayed for over a decade due to disagreements about the provisions of part XI dealing with deep seabed mining. Similarly, a single integrated arrangement is more likely than a collection of more loosely related arrangements to unravel or experience systemic collapse as a consequence of the failure of one or more of its individual components.

What does all this mean for the current debate about the establishment of an Arctic Council? Overall, the move toward a multifunctional regime for the Arctic seems fully compatible with broader trends relating to the growth of international institutions. Yet several caveats are in order regarding this case. In the face of determined American resistance, any effort to include security issues, even indirectly through the introduction of concepts like environmental security, in discussions regarding the Arctic Council will be a nonstarter at the present time. The idea of differentiating between environmental protection and sustainable development as separate pillars of an Arctic Council makes little sense. The central insight embedded in the concept of sustainable development, as articulated by the World Commission on Environment and Development and developed further by others, is that socioeconomic concerns and matters of environmental protection must be considered together. To be successful, moreover, the Arctic Council must find a way to combine the interests of disparate groups of stakeholders, including states or national governments, with their concerns for developing the region's oil and gas reserves and preserving ecosystems of interest to tourists and scientists, and local communities scattered throughout the circumpolar north, with their intense concerns for maintaining traditional cultural practices and subsistence lifestyles. Functional agendas differ from one level of social organization to another; success in the pursuit of international cooperation cannot be achieved by actions that promote the interests of those operating at one level at the expense of those located at other levels.

4.3 Generative Concepts

No matter how complex its substantive provisions, every effective regime rests on and reflects a

generative vision or core concept that serves to integrate its components into a coherent package and to structure the discourse in terms of which participants discuss its operations. A few powerful paradigms animate regimes at any given time, but they are subject to change over time as a result of the development of new intellectual capital as well as shifts in the balance of power among distinct interest groups. Throughout much of this century, regimes dealing with renewable resources rested, for the most part, on the idea of maximum sustainable yield (MSY), a concept that sanctions consumptive uses of plants and animals and provides a criterion for making annual decisions about allowable harvests from well-defined stocks or populations. More recently, this vision has given way to two distinct successors yielding prescriptions regarding preferred institutional arrangements that frequently clash with one another. Among those interested in managing renewable resources for consumptive use, MSY has been supplanted, or at least supplemented, by the ecosystem or whole ecosystem approach. The basic idea underlying this shift stems from the realization that individual species, whether marine or terrestrial, are embedded in complex ecosystems and that changes in other elements of these systems, whether anthropogenic (e.g., habitat destruction) or nonanthropogenic (e.g., natural changes in water temperatures) in origin, can radically affect the status of targeted species, whatever the rules governing the harvesting of these species on the part of consumptive users. Others have abandoned the conservationist vision associated with both MSY and the ecosystem approach in favour of a preservationist vision that seeks to put an end to all consumptive uses of individual species. The core idea here is that humans should become stewards seeking to maintain protected natural areas and the plant and animal communities they harbour rather than acting as consumptive users seeking to harvest renewable resources for subsistence, commercial, or even recreational purposes.

In some situations, these disparate visions come into direct conflict with one another. A particularly striking case in point, which is of obvious interest to those concerned with Arctic governance, is the international regime dealing with whales and whaling. Established in 1946, under the terms of the

International Convention for the Regulation of Whaling, this regime began life as a straightforward arrangement dedicated to the pursuit of MSY on the part of consumptive users of whales. Over time, those responsible for the whaling regime came to recognize the importance of broader ecosystem concerns and sought to initiate measures aimed at habitat protection as well as to reduce harvest levels in the interests of protecting stocks of endangered species of great whales. Starting in the 1970s and continuing to the present, however, this regime has become a battleground for an intense confrontation between conservationists endeavouring to manage consumptive uses sustainably and preservationists seeking to put an end to all consumptive uses of great whales. Although there have been no changes in the formal provisions of this regime, shifts in membership combined with major changes in the economics of whaling, have tilted the balance of power in this regime substantially in favour of the preservationists. Today, those desiring to harvest abundant species (e.g., minke whales) on a sustainable basis are exploring options for management that bypass the existing whaling regime. The creation of the North Atlantic Marine Mammal Commission, which joins Greenland, the Faeroe Islands, Iceland, and Norway and appeals to the concept of sustainable use, owes much to the sense that the International Whaling Commission is a lost cause as far as the interests of consumptive users are concerned.

What are the implications of this discussion of generative concepts for current efforts to launch an Arctic Council? Clearly, this effort draws inspiration from the idea of sustainable development, introduced initially during the late 1970s and popularized by the 1987 report of the World Commission on Environment and Development (the Brundtland Commission). In the context of the Arctic Council, this is both good news and bad news. The good news is that sustainable development offers a new vision which features a commendable concern for the welfare of future generations, recognizes the inseparability of environmental protection and the pursuit of human welfare, and offers an umbrella that is big enough to join together a wide variety of interests and interest groups. Yet there is a high price to be paid for these advantages. Simply put, sustainable development is a

generative concept that is extremely difficult to turn into an operational paradigm or, in other words, to translate into practical guidelines in a manner that is acceptable to a variety of constituencies. There is a danger, therefore, that the idea of sustainable development, evocative as it is, will ultimately prove to be a dead end in the sense that it fails to provide a workable criterion for making decisions about human/environment relations. What is more, actors already skittish about accepting enlarged or ill-defined commitments to international cooperation relating to Arctic matters—the United States is the prime example—may well be scared off by the seemingly open-ended and potentially manipulable character of sustainable development as a basis for this exercise in international regime formation.

4.4 Institutional Tasks

Regimes perform a variety of tasks, and the design of effective institutional arrangements requires a clear understanding of the particular tasks to be performed in specific cases. Although early work on international institutions frequently spoke in general terms about the contributions of regimes to the achievement of international cooperation, recent studies have drawn attention to differences among the problems regimes address and resultant distinctions among the tasks they are called upon to perform. Simple distinctions among types of tasks are risky. Even so, it is helpful to start by differentiating among tasks that are regulative, procedural, programmatic, and generative in nature.

Regulative regimes feature rules or behavioral prescriptions that their members, as well as nongovernmental actors operating within members' jurisdictions, are expected to comply with while engaging in activities covered by the terms of these institutional arrangements. Through much of this century, the four-party regime for the conservation of North Pacific fur seals, for example, prohibited the killing of seals at sea (i.e., pelagic sealing), limited the harvest of seals to bachelor bulls (i.e., nonbreeding males), and mandated a common method of killing individual animals (i.e., stunning and exsanguination). Procedural regimes, by contrast, focus on the establishment and operation of mechanisms designed

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to produce authoritative social choices regarding an agreed range of issues. In many cases, these issues require repeated decisions of a similar nature; setting annual allowable catches for the harvest of specific species of fish or marine mammals is a well-known example. But procedural regimes may also provide a means for arriving at authoritative decisions regarding nonrecurrent matters, including the addition of new elements to an existing regime (e.g., the London and Copenhagen amendments to the 1987 Montreal Protocol dealing with stratospheric ozone). For their part, programmatic regimes feature action plans that focus on the development of joint or coordinated projects dealing with matters of common concern to the members in contrast to the articulation of behavioral prescriptions or the making of social choices. Coordinated efforts to improve knowledge regarding sources and sinks of pollutants in the circumpolar north under the Arctic Monitoring and Assessment Program (AMAP) and to establish a circumpolar network of protected natural areas under the Working Group on the Conservation of Arctic Flora and Fauna (CAFF) are illustrative of this type of task. Generative regimes, while more modest in terms of the tasks they perform, are by no means unimportant in emerging regions like the Arctic. In effect, such regimes seek to develop shared understandings and agreed political agendas that draw members together in a common enterprise. Thus, the effort to propagate a common vision of the Euro-Arctic as a policy-relevant area was surely a major goal for those who worked to form the regime created under the terms of the January 1993 Kirkenes Declaration. Many supporters of the creation of an Arctic Council are motivated by similar concerns.

These tasks are not mutually exclusive. Some regimes seek to perform two or more at the same time. The 1973 agreement on the conservation of polar bears, for example, creates a relatively simple arrangement that nonetheless combines regulative concerns (e.g., a prohibition on the killing of polar bears except under a series of specified circumstances) and programmatic concerns (e.g., a commitment to a program of coordinated research to improve the common pool of knowledge about polar bears). What the agreement itself does not do is to establish a mechanism for making decisions about harvest levels and the

allocation of quotas among prospective users. This procedural task is left to each of the five range states—Canada, Denmark/Greenland, Norway, Russia, and the United States—to handle as it sees fit within its own jurisdiction. The regime for the Svalbard archipelago spelled out in the 1920 Treaty Relating to Spitsbergen, to take another example, combines a number of regulative provisions (e.g., rules mandating equal access to the area's natural resources for all signatories and permanent demilitarization of the entire archipelago) with an arrangement under which managerial functions (e.g., making decisions regarding regulations pertaining to coal mining and tourism in the archipelago) are delegated to Norway as the party granted legal and political jurisdiction over the archipelago under the terms of the treaty.

There are two principal lessons to be derived from a study of the tasks that regimes perform which are relevant to current discussions of an Arctic Council: (1) effective regimes almost always focus on one or more tasks that are straightforward and easy to characterize and (2) the provisions of specific regimes need to be tailored to the tasks at hand rather than be based on some idealized model that may turn out to be inappropriate. Advocates of establishing an Arctic Council appear to be motivated by a desire to establish an arrangement that will allow parties to avoid gaps and overlaps in connection with the multiplicity of cooperative initiatives that have emerged piecemeal in the Arctic in recent years. As it stands, however, this idea is too vague to provide a well-defined task for the council. What does it mean for arrangements initiated by subnational units of government (e.g., the Northern Forum) or nonstate actors (e.g., the International Arctic Science Committee)? How will this regionwide arrangement deal with subregional but still multilateral initiatives, like the Barents Euro-Arctic Region (BEAR) or the North Atlantic Marine Mammal Commission (NAMMCO)? What steps will be taken to ensure that all legitimate stakeholders can participate in a satisfactory manner? In the absence of creative answers to these questions, there is a danger that the formation of the Arctic Council will be perceived by many as little more than an effort on the part of national governments to recapture a dynamic process

whose potential they underestimated in its earlier stages.

4.5 Structures of Representation

These observations lead directly to a consideration of representation in international regimes, both in terms of specifying requirements for membership and in terms of devising procedures for taking into account the interests of stakeholders possessing legitimate concerns even though they do not qualify for membership in their own right. Formally, membership in international regimes is typically restricted to states. But even in this regard, there are some distinctions to be made that may prove relevant to Arctic governance. To begin with, some regimes divide their members into two or more classes, despite the fact that they are all states. The Antarctic Treaty of 1959, for example, provides for a class of consultative parties, which are entitled to participate in decision making, and a class of other signatories, which have no such right. Among Antarctic Treaty consultative parties (ATCPs), moreover, the rules pertaining to the maintenance of that status are different for the twelve original members in contrast to other states that have become ATCPs in the ensuing years.

Other distinctions among the members of international regimes are relevant as well. When the circumstances of member states vary substantially, for instance, regimes commonly differentiate among them in assigning both rights and duties. Sometimes this is a consequence of natural differences, as in the case of rules applying to upstream states versus downstream states with regard to the use and management of international river basins. In other cases, it is more a matter of socioeconomic or political differences. Thus, developed states have obligations regarding the phaseout of CFCs and related chemicals under the provisions of the ozone regime that differ from those of developing states with low consumption levels of the relevant chemicals; the rules dealing with the possession of nuclear materials under the terms of the nuclear nonproliferation regime are different for nuclear-weapon states and nonnuclear-weapon states.

Still, this is by no means the whole story with regard to structures of representation in international

regimes. There are cases in which nonstate actors are accorded formal roles in the operation of regimes. The Barents Euro-Arctic Region, for example, is a two-tiered arrangement encompassing a Barents Council, a standard arrangement whose members are national governments, and a Regional Council, an unusual arrangement whose members are the governments of the region's eight counties and oblasts together with an entity representing the region's Sami people. This regime is noteworthy also because it adopts the European practice of allowing councils to meet with different participants, depending on the issues to be considered at any given session. NAMMCO includes the Faeroe Islands and Greenland, acting in their own right, along with Iceland and Norway, even though the Faeroes and Greenland are legally parts of Denmark. The polar bear regime relies explicitly on the Polar Bear Specialist Group, a mechanism established and run by the World Conservation Union rather than the five members of the regime.

For its part, the Arctic Council may break new ground in this area. The original Canadian vision called for an open forum that would provide ample opportunity for a variety of stakeholders to interact on a more or less equal footing. In addition to national governments, these would include members of subnational governmental arrangements (e.g., the Northern Forum), nongovernmental arrangements (e.g., the International Arctic Science Committee), and Indigenous peoples' organizations (e.g., the Inuit Circumpolar Conference and the Sami Council). This expansive vision has fallen by the wayside over the last four to five years. But the recent preparatory discussions have focused intensively on the development of a category of actors to be known as permanent participants and reserved for representatives of the Arctic's Indigenous peoples. Permanent participants would enjoy a status conveying more rights than the status of observer, even though it would be more limited than the status of member state. Overall, it seems clear that the growing importance of nonstate actors in a variety of contexts will be reflected increasingly in efforts to find creative ways to offer them some form of representation in international regimes, without abandoning the traditional assumption that states are the principal members in formal terms.

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Beyond this, recent years have witnessed a variety of initiatives intended to give stakeholders an enhanced voice in the creation and operation of international regimes, without granting them membership or even the status of permanent participants in their own right. There is a growing tendency, for example, to include representatives of relevant nonstate actors in national delegations and even to allow them to speak for these delegations when their issues are discussed. Official meetings, like the biennial Antarctic Treaty consultative meetings (ATCMs), the annual meeting of the International Whaling Commission (IWC), and the annual meetings of the Conference of the Parties (COP) of the ozone regime, are now considerably more transparent than they were even in the recent past, a fact that allows nonstate actors to take steps to influence such gatherings directly. Today, many regimes make explicit provisions for the participation of one or more categories of observers, include relatively detailed rules regarding the accreditation of observers, and allow observers to take part in many of their activities. As a result, meetings organized under the auspices of international regimes now have a profoundly different character than they did as recently as a decade or two ago.

As I have suggested already, discussions relating to the Arctic Council reflect these developments regarding structures of representation. Still, there is a sense in which these efforts are ad hoc in nature. From a design perspective, the lesson to be gleaned from this discussion concerns the importance of developing a clear picture of the functional scope and principal tasks of a proposed regime and of making decisions about representation in the light of this picture. If the functional scope of a regime is to be broad, for example, it makes sense to adopt the European practice of allowing the regime's bodies to meet with different groups of participants depending upon the issues under consideration. To the extent that the principal task is to foster the development of sustainable communities in high latitudes while simultaneously maintaining the authority of national governments in the region, moreover, it makes sense to accord Arctic stakeholders a clear voice in the council, even though they do not qualify as states. In this regard, it may help to give serious thought to the creation of a two-tiered system, as in the case of the

Barents Euro-Arctic Region, in which regional stakeholders enjoy an acknowledged status within the overall structure of an international regime for the Arctic. This option seems particularly worthy of attention in light of the fact that the Arctic differs from many other international regions in that no country (with the possible exception of Iceland) lies wholly within the region, even though sizable portions of a number of countries are unquestionably Arctic in nature. At the national level, this means that Arctic issues must compete with a variety of other concerns demanding attention on the part of governments. It follows as well that issues centred on relations between subnational authorities located in the Arctic and national governments based outside the Arctic are destined to loom large in this region. To become effective, any broadly based multilateral regime for the Arctic needs to accord priority to devising creative ways to deal with this distinctive feature of the region.

4.6 Organizational Needs

The distinction between institutions and organizations is one of the significant contributions of the new institutionalism in international relations and, for that matter, in the social sciences more generally. As an earlier section of this paper indicates, regimes are social institutions or constellations of roles, rules, decision-making procedures, and programs, whereas organizations are material entities possessing offices, personnel, equipment, budgets, and legal personality. Any account of governance in the Arctic must consider not only the distinctive roles of institutions and organizations but also interactions between the two that are particularly relevant to conditions prevailing in the high latitudes. In recent years, both the number and the variety of organizations active in the Arctic have increased rapidly. In addition to governments, this group now includes Indigenous peoples' organizations (e.g., the Inuit Circumpolar Conference), nongovernmental organizations (e.g., the Audubon Society, Greenpeace, the World Wildlife Fund), and multinational corporations (e.g., Amoco, Cominco, British Petroleum). Although multilateral regimes, such as the Arctic Environmental Protection Strategy, have flourished in the Arctic since the late 1980s, it is probably fair to say that the development of international institutions in this increasingly

important region has not kept pace with the expansion of human actions whose effects transcend the boundaries of national jurisdictions. The resultant asymmetry is a major source of the need felt in many quarters to move toward the establishment of a more comprehensive Arctic regime at this time.

The purpose of distinguishing between institutions and organizations is not to suggest that institutions are more important than organizations or vice versa. Rather, it opens up a major agenda of issues focusing on interactions between the two. In this regard, it is helpful to consider roles organizations play both in the formation of international regimes and in the operation of these arrangements once they are launched. Organizations can contribute to the establishment of international institutions by (1) adding to our knowledge of the problem to be addressed, e.g., the role of the Intergovernmental Panel on Climate Change (IPCC) in the case of the climate regime, (2) creating specific mechanisms whose assignment is to develop the provisions of constitutive agreement, e.g., the international negotiating committees that hammered out the terms of the biodiversity and climate conventions signed during the United Nations Conference on Environment and Development (UNCED) in June 1992, and (3) providing ongoing fora in which parties can exchange thoughts on current issues without engaging in formal negotiations, e.g., the United Nations Environment Programme (UNEP) in conjunction with the various regional seas initiatives. The fact that these illustrations feature bodies belonging to the United Nations system is not accidental; the United Nations has had a hand in the creation of many international regimes in recent decades. Coupled with the low profile of the United Nations in the Arctic, a region long dominated by the superpowers and treated as off limits for United Nations' activities, this fact raises important questions about regime formation in the circumpolar north. As cold war perspectives recede, will the United Nations have more success in finding a role to play in the high latitudes of the Northern Hemisphere than it has had at the other pole? If not, what other organizations are well placed to step in to nurture the process of regime formation in the Arctic?

Because regimes are arrangements that provide frameworks for action on the part of a variety of players who cannot become actors in their own right, it is important to ask what organizations are needed to operate or administer the provisions of regimes once they are launched. In some cases, like the regime for polar bears, these tasks are left entirely to the member states to handle as they see fit within their own jurisdictions. Increasingly, however, regimes are being equipped with organizations of their own to handle a number of tasks that are important to their success. In the typical case, this means setting up an international secretariat which concentrates on administrative tasks in formal terms, but which may well become a political force in the operation of the regime in its own right. Beyond this, regimes can acquire organizations that are more functionally specific, like EMEP in the case of the European transboundary air pollution regime, the multilateral fund in the case of the ozone regime, and the Enterprise in the case of the failed regime for deep seabed mining included as a component of the 1982 Law of the Sea Convention. In general, the lesson to be drawn from an examination of the performance of such organizations is that form should follow function in meeting the organizational needs of specific regimes. This means that organizations are not ends in themselves and that there are no simple formulas to be applied in determining the organizational needs of individual regimes. Rather, once the parties arrive at a clear understanding of the tasks they want a regime to perform, they need to customize any organizations created to operate the regime according to the particular circumstances of the case at hand.

What are the implications of this discussion for the Arctic Council? At this juncture, the participants in the preparatory discussions are proposing to assign administrative tasks to individual members on a rotating basis rather than setting up a permanent secretariat for the council. In effect, the country serving as council chair at any given time would supply secretariat services during the period of its chairmanship. Although this preference is understandable as a politically conservative choice in a region dominated until recently by the cold war confrontation between the Soviet Union and the

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United States, it is well behind the cutting edge in the context of international regime building more generally. If the Arctic Council proves successful, this system of rotating administration is likely to give way to the establishment of a permanent secretariat in relatively short order.

As currently envisioned, moreover, the council itself is an ambiguous arrangement with respect to the distinction between institutions and organizations. In the minds of some, the council is expected to emerge as a relatively simple regime that would subsume the existing Arctic Environmental Protection Strategy and expand its functional scope to include some related socioeconomic and cultural matters, probably under the rubric of sustainable development. Others, by contrast, envision the council as a forum providing an organized arena in which a variety of stakeholders would meet on a regular basis and interact both formally and informally on matters of common concern. On this account, the council would be a scaled-down, regional version of the United Nations. It would provide an organized setting in which participants could discuss a wide range of issues without any explicit expectations about the outcomes, and it would exhibit many of the attributes of an organization. Although such a council might play some role in creating and managing Arctic regimes, it would not be a regime in its own right. There is a respectable case to be made for each of these visions of the proposed Arctic Council. But both cannot be realized in the same initiative. What is needed, at this juncture, is a conscious effort to reach agreement concerning this matter rather than a rush to closure on the terms of a ministerial declaration that becomes a source of confusion and potential conflict among those responsible for operating the council once it comes into existence.

4.7 Top-Down/Bottom-Up Balance

From the perspective of the Arctic's permanent residents, multilateral arrangements, like the Arctic Environmental Protection Strategy or the proposed Arctic Council, frequently appear as remote initiatives having little or nothing to do with efforts to solve their day-to-day problems. In some cases, these international arrangements, created and administered by

people with little understanding of conditions prevailing in the Arctic, actually pose threats to the livelihood of Arctic residents. A striking example is the international regime for whales and whaling during the period since the shift from conservationism to preservationism in the late 1970s, a development that has forced Arctic residents to expend much time and energy protecting their right to continue the harvesting of whales. In other cases, international regimes, established without regard to their implications for the sparsely populated Arctic, generate disruptive consequences for Arctic residents that are largely inadvertent in nature. A number of the migratory bird regimes, which make it virtually impossible for Arctic users to harvest birds in a manner that is permissible under the terms of these arrangements, illustrate this problem. It is hardly surprising, then, that local residents show a marked tendency to view efforts to create multilateral regimes for the Arctic as irrelevant at best and as a source of serious threats to the viability of their way of life at worst.

What can we do to strike a proper balance between top-down initiatives and bottom-up concerns in meeting challenges of governance in the Arctic during the foreseeable future? To begin with, it is important to recognize and acknowledge a fundamental asymmetry between the interests of the Arctic's permanent residents and the interests of those located elsewhere who support the creation of multilateral institutions for the Arctic. Although their numbers are small, both the maintenance of rights to harvest the Arctic's renewable resources for consumptive purposes and the control of airborne and waterborne pollutants reaching the Arctic from the south are literally matters of life and death for permanent residents of the high latitudes. By comparison, the desires of people located in Toronto, New York, London, or Paris to put an end to the killing of wild animals or to protect large marine and terrestrial ecosystems in the North as wilderness areas are largely matters of current taste. One way to characterize this asymmetry is to say that the permanent residents have interests in Arctic issues that are more intense than the interests of outsiders. As the region's Indigenous peoples have discovered, on the other hand, another approach that can be particularly potent in legal as well as political terms is

to treat the claims of the permanent residents as rights that trump the interests of outsiders, regardless of the number of people involved.

In purely pragmatic terms, as well, there is much to be said for respecting the concerns of the region's permanent residents. Although the actual members of international regimes are typically states, many of these arrangements require compliance on the part of subnational and even local actors to succeed. The international regimes for whales, polar bears, and migratory birds, for instance, cannot operate effectively if local users are unwilling to comply with their rules and decisions. In the Arctic, where users are widely dispersed and located in remote areas, efforts to achieve compliance by means of enforcement often prove prohibitively expensive. It is therefore vital to design and operate regimes in such a way that local users acquire a sense of ownership of these arrangements which leads to compliance on a voluntary basis.

It is worth noting as well that maintaining cultural diversity can become a significant force in efforts to protect nature and natural resources in a region like the Arctic. People who depend on harvesting renewable resources on a continuing basis have strong incentives to conserve both the resources themselves and the habitats on which they depend. Such incentives are particularly potent when uses of renewable resources are embedded in cultural practices that retain their vitality. Quite apart from arguments framed in terms of rights, therefore, there is much to be said for supporting the consumptive use of the Arctic's renewable resources as a means of sustaining the Indigenous cultures of the high latitudes.

Perhaps the most interesting response to these concerns in recent years involves an institutional innovation that is generally called comanagement. Although many variations are possible, all variants of comanagement feature an approach to resource management that involves joint decision making and implementation on the part of local users whose actions are at stake and representatives of agencies of regional or national governments possessing the legal authority to promulgate regulations and make managerial decisions about the resources in question.

Handled properly, comanagement offers a means of incorporating traditional ecological knowledge into resource management and giving users a sense of ownership that alleviates problems of noncompliance. As developed in Alaska and in the Canadian Arctic, comanagement is now used in a variety of situations that are essentially domestic in character. But there is nothing to prevent the use of comanagement to deal with transboundary or international management problems. The bilateral regime for the Porcupine caribou herd, which straddles the Alaska–Yukon border, incorporates the idea of comanagement; arrangements emerging in recent years for the polar bear stock of the Beaufort Sea region feature a transboundary comanagement scheme that is nested into the broader, circumpolar regime that the five range states developed for the protection of polar bears in the 1970s.

What lessons should those responsible for crafting the elements of the Arctic Council draw from this discussion of the importance of striking a balance between top-down and bottom-up concerns? One obvious inference relates to the importance of according adequate respect to the concerns of the region's permanent residents. In this connection, the idea of establishing a category of permanent participants, to be reserved for representatives of the Arctic's Indigenous peoples, is an important step in the right direction. Despite some difficulties in reaching agreement on criteria for inclusion in the group of permanent participants and in setting up procedures for adding new members to this group, this innovation may well emerge as the most notable achievement of the Arctic Council from the perspective of international governance. Beyond this looms the need to forge links between the growing array of comanagement arrangements, which focus on subregional or even local issues, and the regionwide arrangements of the Arctic Council. At stake in this connection is the need to avoid a situation in which subregional and regionwide initiatives evolve along unrelated but potentially conflicting tracks. The principle of subsidiarity, arising from the practices of the European Union but applicable more generally, suggests that it would be undesirable for the Arctic Council to make any move to take over transboundary comanagement arrangements developing in various

parts of the Arctic. Yet the council may lend support to these subregional initiatives by facilitating communication among those working on such arrangements in different parts of the region, enhancing the legitimacy of specific arrangements as elements in a broader system of Arctic governance, and providing financial support in cases where the availability of material resources is a limiting factor.

4.8 Global Connections

Because the emergence of the Arctic as a region regarded as distinctive in policy terms is such a recent development, there is some tendency among members of the Arctic Eight to overlook or set aside connections between the high latitudes and the outside world. This is perfectly understandable as an expression of a desire to develop a well-defined and robust regional identity before becoming enmeshed in a network of linkages to other areas. Yet the interdependencies characteristic of today's world make it difficult—often impossible—to solve regional problems without taking such linkages into account from the outset. Nowhere is this more apparent than in the Arctic, a region that is unusually sensitive to actions initiated outside the region by actors that neither know much about the high latitudes nor care much about the consequences of their actions for life in the Far North.

Some of the most striking of these connections arise from the fact that the Arctic is tightly linked to the rest of the world ecologically and that the region is thought to be particularly sensitive to global environmental changes. Scientists anticipate that temperature increases in the high latitudes associated with global warming will be two to three times the magnitude of those occurring in the midlatitudes. The Arctic has developed a seasonal ozone hole that may pose severe threats to human health, even though the actual depletion of ozone is not as great as the depletion at the opposite pole. Air and water currents carry a variety of pollutants originating in the midlatitudes into the Arctic, which acts as a sink retaining pollutants for long periods of time. Among the most damaging are sulfur and nitrogen oxides, heavy metals, and persistent organic pollutants. A number of the Arctic's living resources, including

many marine mammals and seabirds, migrate seasonally to areas outside the Arctic where they are threatened by the destruction or degradation of key habitats. Under the circumstances, the common vision of the Arctic as a remote and pristine area, a vision never fully in line with the facts, is no longer tenable.

An array of other connections also link the Arctic to the rest of the world today. World market prices determine whether the Arctic's reserves of hydrocarbons and deposits of nonfuel minerals, which are very large but also unusually costly to extract and transport to markets, will be developed commercially, increasing the environmental and the socioeconomic impacts of industrialization on the region. Similar remarks are in order about plans to develop Arctic infrastructures (e.g., the Northern Sea Route) to meet the needs of international commerce. The ability of Northern residents to earn a living by marketing animal products, including furs and bone as well as meat, is controlled in large measures by outside forces, such as boycotts organized by animal protectionists, political actions on the part of southern organizations (e.g., the European Union's ban on seal products), rapid shifts in markets for luxury goods, and the long-range impact of environmental accidents occurring in the midlatitudes (e.g., the 1986 Chernobyl disaster). Even the role of the Arctic in international security affairs is fundamentally a by-product of political developments occurring elsewhere rather than the politics of the Arctic region as such. As recently as the late 1980s, the Far North was a leading theatre for the deployment of strategic weapons systems. But the collapse of the Soviet Union and the end of the cold war has turned the region, for the moment at least, into a backwater with regard to security issues.

The point of these observations is not to deny the fact that the Arctic is a distinctive international region possessing a political agenda of its own. Yet these global connections ensure that an Arctic regime, even the relatively comprehensive one advocated by some advocates of the Arctic Council, cannot solve the full range of collective-action problems arising in the region. A particularly troublesome feature of many of these global connections is that they are by-products of the actions of those who will never feel or, in many

cases, even become conscious of the impact of their actions on the Arctic and its permanent residents. Most residents of southern metropolises are unaware of the role of the Arctic as a sink for pollutants produced in the midlatitudes. Socioeconomic impacts affecting remote Arctic communities do not figure prominently in the decision processes of multinational corporations interested in developing the Arctic's nonrenewable resources. The havoc caused by antiharvesting campaigns in small Arctic communities are of little concern to animal protectionists. For all practical purposes, therefore, these systems lack negative feedback loops in the sense of processes that can trigger equilibrating reactions when a particular set of actions drives them out of balance.

It follows that one of the major challenges of Arctic governance centres on the need to establish feedback mechanisms that will prevent the Far North from being treated as a sacrifice zone by actors located in the midlatitudes who neither know nor care about the consequences of their actions in the circumpolar north. The arrangements currently under consideration to allow non-Arctic actors to participate as observers in the work of the Arctic Council are wholly inadequate to deal with this problem. It is debatable whether the issue of global connections should be addressed in the council itself or in some related arrangement set in motion after the Arctic Council is well launched. There is something to be said for the argument that the council will never get off the ground if it has to cope with all, or even some, of these global connections from the outset. On the other hand, outside forces could easily undermine the efforts of the council to solve many collective-action problems affecting the Arctic, and there is no reason to expect those whose actions are responsible for these forces to take the initiative in dealing with these matters on their own.

What is to be done about this problem? Obviously, there is no simple solution. But several options are worth exploring seriously as elements of a solution. Because the European Arctic (with the exception of Norway) is now included in the European Union, there are opportunities to press for an enhanced concern with the welfare of the high latitudes through the work of the commission and other EU organs, including the

council and even the European Court of Justice. Similarly, the fact that Russia and other members of the Commonwealth of Independent States are dependent on outside sources of investment capital, including the World Bank, provides an opportunity to work toward a greater concern for environmental and socioeconomic impacts in the Arctic as part of the process of reaching decisions about loans and other forms of financial support. The growing Arctic interests of some influential nongovernmental organizations (e.g., the World Wildlife Fund/World Wide Fund for Nature and even Greenpeace) may also be harnessed under some circumstances to raise the consciousness of southerners regarding the destructive consequences of their actions on Arctic systems. None of this should be allowed to become an excuse to slow down, much less derail, the process of forming the Arctic Council. But the creation of a council that diverts attention from efforts to deal with these global connections is likely to be viewed within a short time as a Pyrrhic victory.

5.0 CONCLUSION

As the twentieth century draws to a close, the Arctic region stands at an historic turning point with regard to the pursuit of international governance. Held in check by the cold war, a pervasive conflict that split the region politically and gave it a central role in the confrontation between the two superpowers, interest in cooperative initiatives dealing with Arctic issues has expanded rapidly in recent years. Starting with modest bilateral initiatives, like the Grey Zone Agreement between Norway and the Soviet Union, the Jan Mayen Agreement between Iceland and Norway, and the Marine Environmental Conservation Agreement between Canada and Denmark/Greenland, this movement has gathered force and come to focus on the development of multilateral arrangements. The result is an increasingly complex mosaic of arrangements developed by different actors to meet a variety of demands for governance. Some are subregional initiatives, like the Barents Euro-Arctic Region and the North Atlantic Marine Mammal Commission. Others are initiatives involving nonstate actors, like the Northern Forum, the International Arctic Science Committee, and the emerging Association of Indigenous Peoples of the Circumpolar

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North. But interest is growing as well in the establishment of regionwide arrangements linking the governments of the eight Arctic states in cooperative enterprises. The Arctic Environmental Protection Strategy, launched in 1991 and developing over the last five years in a surprisingly vigorous manner, is a concrete expression of this movement. The current effort to create an Arctic Council is another manifestation of the same dynamic.

Already, the Arctic has emerged as a distinctive region in international society, and the Arctic Eight have acquired a conscious sense of their generative role as the leading players in the development of a regionwide regime for the Far North. The revival of interest in the role of international regions more generally has certainly reinforced this movement among the Arctic states. This explains the momentum associated with the drive to establish the Arctic Council at the present time. But it does not ensure that the council will emerge as an effective, much less progressive, force in the political evolution of the Far North. This will depend upon the capacity of the Arctic Eight to make and implement appropriate choices regarding such matters as the assignment of tasks to the council, the representation of nonstate actors, the relationship between form and function in meeting organizational needs, the inclusion of bottom-up perspectives, and links to the outside world. Handled poorly, the treatment of these issues will produce a mechanism seen by many as a thinly disguised effort on the part of foreign ministries to recapture the action in the high latitudes and consign the Arctic Council to the ranks of uninspired and generally ineffective international arrangements. Yet the opportunity exists today to launch an experiment in problem solving at the international level that will not only prove effective at the regional level, but also loom large in the thinking of those seeking to deal with similar issues in other segments of international society.

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Presentations

Challenges for Arctic Governance

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of Parliamentarians of the Arctic Region

On behalf of the Standing Committee of Parliamentarians of the Arctic Region, I want to express my sincere gratitude to the House of Commons of Canada and to the Ministry of Environment of Canada for arranging this conference. The work concerning the program has been done in close cooperation with our Standing Committee. This is already a good start for active parliamentary participation in Arctic cooperation in the future. Arctic governance presupposes close ties with all groups involved in shaping the future of the Arctic, with continuous dialogue between the governments and parliaments of the Arctic states. I think we have given the example with our two conferences so far: the one in Reykjavík three years ago and then this one in Yellowknife.

I also want to express my thanks to the Canadian government for its active work to get the Arctic Council established. Our next speaker, Ambassador Mary Simon, has been especially involved in the work, and she has made a strong contribution towards achieving results for this project, for which we are thankful.

When we started working on this conference, we were hopeful that the declaration concerning the Arctic Council would be signed at the AEPS ministerial meeting in Inuvik next week. We now know that a few more months will be needed to get the final problems solved. The Canadian government proposed an Arctic Council in 1989, with all eight Arctic states as members. During last year, the work to get the council established was intensified. The Arctic regions have become even more interesting in an international context, and the challenges and possibilities for Arctic

cooperation are enormous. Many different organizations have also been established for different Arctic causes. In this respect it has become even more natural to establish a common framework for all Arctic initiatives and a mandate for one organization to take the main responsibility for Arctic cooperation. The idea has had the full support of the Nordic countries from the beginning, and it has been reaffirmed several times during the last few years, for example, in meetings with the Nordic prime and foreign ministers and at the general assembly meeting of the Nordic Council in November last year.

In the following remarks I will concentrate largely on issues concerning parliamentary involvement in Arctic governance.

As we all know, the parliamentary dimension of Arctic cooperation has a fairly short history. The Nordic Council took the initiative to arrange the first conference for parliamentarians of the Arctic region in Reykjavík, Iceland, in August 1993. The conference adopted a final declaration in which a number of important issues in Arctic cooperation were taken up. In addition, the conference decided that a Standing Committee of Parliamentarians should be set up to follow the work and to take new initiatives. The Nordic Council was asked to organize the work and to take responsibility for the secretariat of the committee. Fortunately, there are a number of people here today who were also present at the conference in Reykjavík and have good memories of work at that time.

After discussions at the Nordic Council and after contacts with the parliaments involved in the first conference, the Standing Committee started its work in September 1994. In order to keep the committee small in size, it was agreed that the five Nordic countries should be represented by three members appointed by the Nordic Council. In addition, the committee has one member from Canada, one from Russia (which now will be two as of this conference), one from the United States, and one from the European Parliament. One seat has also been reserved for the Sami Parliaments and the Inuit Circumpolar Conference.

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One of the main priorities of the committee at this first stage has been to support the establishment of the Arctic Council. It has been important for the committee to take the initiative and to participate actively in the planning of this conference. We now have the possibility at this early stage to come forward with a considerable contribution towards the coming work of the Arctic Council.

The Arctic Council is going to be based on a charter signed by representatives of the governments involved. It will in, this respect, be a normal organization of governments. Part of successful global governance today is, however, an active dialogue between governments and parliaments. Many international organizations today have a parliamentary assembly of some sort. For example, formal Nordic cooperation was started in the 1950s as cooperation between the parliaments. Governments only became involved later. In order for Arctic cooperation to be effective, our committee strongly feels that the new Arctic Council should have a structure in which all such parliamentarians are involved. I hope this will be reflected in our final document. It is important that the coming work will be carried out in a way that ensures public support for the measures that have to be taken. This can best be guaranteed in an active dialogue between the governments and parliaments involved. The Standing Committee could be developed into becoming the parliamentary dimension of the Arctic Council. We have now gained the experience needed for active work with Arctic issues, and we have the necessary contacts in different directions. It is up to the parliaments present here to decide if we should continue as present or if an enlargement of the committee possibly is needed to accommodate all interests.

As part of the structure for Arctic cooperation, it will be important for the committee to take initiatives and to present them to the Arctic Council, and to express the views of parliamentarians on important issues to the responsible ministers before decisions are made. We also have an important responsibility on the national level to support, in our respective parliaments, the work of the Arctic Council, to support allocation of funds for the council, and in general to widen support for Arctic policies.

In practice, we are not asking the governments for anything new. It is a question of continuing within the Arctic Council the system that has already been established in the AEPS. Representatives of our staff have been accepted as observers at meetings of senior Arctic affairs officials of the AEPS, and parliamentarians have been invited to participate in ministerial meetings of the AEPS. No formal decisions on a government level are needed concerning the work of our parliamentary committee. It is a question for the parliaments involved. The Nordic Council is willing to assume responsibility for the secretariat of the committee, at least for the time being, if this is in the interest of the participating parliaments. One important question, however, remains to be solved. It is essential for our future work that the governments involved in the negotiations concerning the Arctic Council clearly express their wish to work closely with the Standing Committee of Parliamentarians. We want our status and working relationship with the council to be clearly expressed in the charter concerning the establishment of the council. We have taken up this question on many different occasions since we started our work. A formal proposal was made at the Arctic Council discussions arranged in Washington, D.C., at the beginning of September. So far we have received mixed signals. In a meeting arranged between the Nordic members of the Standing Committee and the Nordic foreign ministers, the foreign ministers expressed their support for direct parliamentary involvement in the Arctic Council. We also know the Arctic ambassadors from the Nordic countries have taken up this question in the negotiations. At this point, we do not have any new information on how this initiative has been received in the other countries involved. I urge all parliaments participating here to take up this issue once again on the national level directly with the ministers and negotiators involved. It is especially important that all members of the Standing Committee now renew their personal efforts to get this remaining problem solved.

An important task for the Arctic Council will be to provide a forum for addressing the aspirations, goals, and concerns of the Indigenous peoples and other residents in the Arctic. The Standing Committee fully supports a strong position for the Indigenous peoples

on the Arctic Council. It is very important that persons inhabiting the Arctic take part in international negotiations which have direct consequences for their society, environment, and natural resources. An important task of Arctic governance is to give special consideration to all measures which will give Indigenous peoples and other residents the possibility to obtain equal opportunities for social, cultural, and economic development.

A report produced by the Nordic Council of Ministers about a year ago, as a result of recommendations adopted by the Nordic Council on Arctic cooperation, very clearly states the necessity for the governments in the Arctic states to find a way to involve all the different population groups in a broad pattern of cooperation. This must be done together with the organizations representing the Indigenous population groups. Major emphasis should also be placed in this context on coordination of the work currently being done in various working groups. The Indigenous Peoples Secretariat, which has been established in Copenhagen within the framework of the AEPS, can have an important role in the practical work.

The Indigenous peoples in the region are aware of the high degree of interdependence between the subsistence base, forms of habitation and lifestyles, and their social and cultural traditions. In the future it is necessary to provide space for this traditional interplay between lifestyle and the ecological conditions. Arctic cooperation must address the environmental impact of industrial activities, tourism, and other economic activities, and the obvious interests focused primarily on the preservation of the historical subsistence base. Arctic governance must accommodate these different interests.

In his excellent paper on Arctic governance, Dr. Oran Young stresses the need for creating a forum which allows for broad participation within the framework of the Arctic Council. The discussions so far have focused on the status of Indigenous peoples' organizations as permanent participants in the council. In addition to, or instead of, a limited number of organizations with special status, I would like to propose the establishment of two special committees under the council. The committees would be given

broad powers to follow and influence the work of the council. One committee would represent Indigenous peoples, and all organizations meeting certain basic criteria would be allowed representation. The other committee would consist of representatives of various regional organizations, for example, in the west Nordic region, and of environmental groups and other organizations active in the Arctic or with specific Arctic interests. With this kind of an organization, we could secure the involvement of all those who are interested in the Arctic. At the same time, a channel would also be created for those who from time to time feel the need to voice opposition to policies concerning the Arctic. My belief is that this measure would only strengthen Arctic cooperation. Many problems for the Arctic today are caused by misunderstandings and by relying on values that exist in areas far away. We should create a forum that will also contribute towards broadening understanding of life and the conditions for it in the Arctic.

As I said at the beginning, the establishment of the Arctic Council has had the highest priority in the work of the Standing Committee. We can only regret that our governments are not finished with their negotiations. I am, however, confident that we will see the final results in a few months. The Arctic Council is expected to address a broad range of issues for the future. This means that the work of the council will need a strong commitment and support from all countries involved. It should be clear to all that what we now see developing is only a first modest step. Structurally the new organization will be weak. It will be based on a declaration, not an international treaty. It will not have a permanent secretariat; instead, the lead country will take responsibility for the staff work. The organization will not have a budget; financing will be based on voluntary government contributions.

Politically it has not been possible to achieve far-reaching results at this time. To get the organization established, however, is an important first step. For the future it will be important for all parliamentarians to work for the gradual strengthening of the Arctic Council. Here I would like again to refer to the paper by Dr. Young. He points out some of the problems we might be building into the organization. In my opinion, the Arctic Council will need a permanent

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secretariat, and a system to ensure the financing of the organization needs to be established. During the next stage, I also think the possibilities to strengthen cooperation through an international convention on Arctic cooperation should be considered.

The importance of the Arctic is clear to all of us. The possibilities for the future are very challenging. The introductions during this conference have added new dimensions to the coming work. Because it is a new area of cooperation, we have the possibilities to use the latest ideas for governance, cooperation, democracy, and the furthering of contacts between individuals and groups. On a global level, our work will be evaluated not only on the basis of the results we achieve within the region, but also on the contribution we can make towards security and stability in the world. Here the structures that have been developed for direct contacts and cooperation within the region will be of great value. The task of Arctic governance is, above all, to ensure the dynamic functioning of this system.



The Arctic Council: Status, Challenges, Next Steps

Mary May Simon
Ambassador for Circumpolar Affairs
(Canada)

I am very pleased to be here and to be given the opportunity to talk about such an important issue. I am also pleased to have the opportunity to be able to address the Second Conference of Parliamentarians of the Arctic Region. The first day of your conference was very interesting and most informative, not only in listening to and participating in the discussions with some of you on issues in which I have been actively involved during the last two decades, but also in meeting with colleagues, making new acquaintances, and meeting some old friends.

The very strong support I heard yesterday from you on the Arctic Council is encouraging, and the statements made that the Arctic parliamentarians have

an integral role in the council is very important. For me, it is not a question of whether there is a role for this important group, but rather what is the appropriate role.

There may be various ways how parliamentarians can be involved in the Arctic Council, and we have heard some different proposals—direct participation in national delegations, conferences held in tandem with the Arctic Council, or establishment of a standing committee—with each using its strengths and resources to reach common goals. There are other options as well that will have to be discussed in the next several months. It is an issue that must be addressed in the next several months leading up to the creation of the council, but also within the governments of the eight Arctic countries by parliamentarians.

Mr. Haarde raised an interesting proposal a few moments ago on creating two special committees. He also raised other important issues. I think this is an indication of the complexity of setting up an international forum that will bring eight Arctic nations together with the direct participation of Northern Aboriginal peoples.

At this conference, participants are exchanging views on numerous substantive issues of central importance to the Arctic. These essential topics include such diverse subjects as sustainable comanagement of natural resources, circumpolar trade and economic opportunities in a sustainable development context, transboundary environmental contaminants, and nuclear waste affecting the Arctic.

As your discussions demonstrate, there continues to be an increase in both the number and complexity of factors and actions affecting the security of the Arctic and its peoples. These new challenges further reinforce the need for the flexible circumpolar forum known as the Arctic Council, which is in the process of being established. The council will not divert attention away from these crucial issues, but rather will bring much-needed focus to them for appropriate action.

I am here today in my capacity as Canada's Ambassador for Circumpolar Affairs and have been

invited to speak about the proposed Arctic Council initiative. This initiative of bringing nation states together is based on the belief that the increasing number of local and regional problems have international roots, most of which can be best addressed through cooperative and international action.

First, let me say a few words about my role, since it directly relates to this topic. I was appointed in October 1994 as Canada's first Ambassador for Circumpolar Affairs, reporting to both the Minister of Foreign Affairs and the Minister of Indian Affairs and Northern Development, as part of the foreign policy commitment of the Government of Canada to promote increased cooperation among the eight Arctic states. This foreign policy commitment recognizes that since the end of the cold war, the threats to the security of the Arctic are nontraditional; that is, that the integrity of the Arctic environment, the livelihood of Arctic peoples, and the economic viability of Northern communities and all Northern residents should now be the issue at the forefront of an Arctic agenda.

As a result of this new foreign policy commitment, my responsibilities include representing Canada at international meetings on circumpolar issues; consulting with interested Canadians, particularly Northern governments, Aboriginal peoples, and other Northerners; and coordinating the efforts of the federal government in addressing circumpolar issues, of which the Arctic Council initiative takes priority.

STATUS OF THE ARCTIC COUNCIL

As many in this audience are aware, the creation of the Arctic Council was first proposed formally by Canada in 1989. In reality, the concept dates back at least two or more decades. Although consultations have taken place over the last four years, the initiative did not really have momentum until last February. At that time, a joint statement endorsing the establishment of an Arctic Council was issued by Prime Minister Chrétien and President Clinton. Since June, three meetings have been held with senior officials from the eight Arctic countries and representatives from the Inuit Circumpolar Conference, the Sami Council, and the Association of Indigenous Minorities

of the North, Siberia, and the Far East of the Russian Federation.

Beginning with the June meeting, consensus was reached by all participants for the need to create an Arctic Council initially based on two initiatives: the existing Arctic Environmental Protection Strategy (AEPS) and an expanded proposed Arctic Sustainable Development Initiative (ASDI). We are in the process of drafting a declaration which outlines a set of principles, objectives, tasks, and procedures under which the Arctic Council will operate. Once there is consensus, our common goal is to establish the council this summer, with an inaugural meeting of foreign ministers of the Arctic states being held in a Northern community in Arctic Canada.

CHALLENGES

Dr. Oran Young's paper underlines some of the key issues surrounding the implementation of an Arctic Council. In reading his paper and the theme papers by Dr. Terry Fenge and Mr. Hajo Versteeg, I am convinced that we are on the right track in trying to create an Arctic Council at this time. Permit me to try to explain in my own words, as a Northerner and as an Inuk, why I believe this to be so.

Arctic governments and peoples have recognized that there are common problems and challenges that transcend state boundaries. These challenges relate to economic, social, environmental, and other issues in Arctic regions which directly affect the lives of Northerners and their communities. If left unchecked, the number of unresolved problems will have a tendency to increase substantially with the continuing development within and outside the Arctic.

With the establishment of an intergovernmental forum of the eight Arctic countries, it will be possible for the first time to address problems that cannot be dealt with, or are not being dealt with, internationally. This would help to strengthen and support existing circumpolar initiatives, meet the challenge of realizing sustainable and equitable economic development, and provide a broader and more coordinated voice in response to the many critical issues faced by Arctic countries and their people. The Arctic Council, as an

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intergovernmental forum, will be able to mobilize the political will and bring these resources to bear on the problem on a more consistent basis than is now the case.

There are a number of successful bilateral and multilateral initiatives and agreements already in place, such as the AEPS, the Polar Bear Convention, the Porcupine Caribou Management Board, and others. These are important initiatives, and I know that they will continue to contribute to the welfare of the Arctic. Their track record of working cooperatively and doing certain things successfully is well documented. In many instances, these bilateral and multilateral initiatives are issue-specific, dealing with individual species or narrowly defined geographical areas. The next step in creating the Arctic Council is to build upon these individual successes in support of all initiatives.

The need for an intergovernmental Arctic Council was recognized and strongly supported by your fellow parliamentarians at the first conference three years ago in Reykjavík. Last October, at the Third Session of the Barents Euro-Arctic Council, the council members expressed their satisfaction with the progress of the discussions concerning the establishment of an Arctic Council. There was also positive support for the Arctic Council when Prime Minister Chernomyrdin visited Canada last year. I believe that in the circumpolar region there is considerable support at the highest political level for the creation of an Arctic Council.

With an Arctic Council in place, the Arctic partners can take a step further in demonstrating their commitment to circumpolar cooperation. The Arctic Council could become a major circumpolar forum contributing to international cooperation, promoting stability and continuity, and setting the scene for examination and resolution of social and economic problems. Cooperation is the key word here, and from the AEPS experience, there are two important lessons to be learned. The first lesson is that people have learned to work together and, more importantly, to talk to each other, whether they are government officials or scientists, which has provided very positive results. The second lesson, which has been

clearly demonstrated, is that Indigenous peoples have a major and constructive role to play once provided with the opportunity.

In this context, the Arctic countries have recognized the prime role and interests of Indigenous peoples in the Arctic by providing for their meaningful participation in the work and deliberations of the Arctic Council. In addition to the eight member states, at present three organizations representing Indigenous peoples throughout the circumpolar Arctic will have permanent participant status in the council: the Inuit Circumpolar Conference, the Sami Council, and the Association of Indigenous Minorities of the North, Siberia, and the Far East of the Russian Federation. I should underline that Canada fully supports the discussions that are under way by the Aboriginal peoples to increase the participation in the Arctic Council of other Aboriginal peoples' organizations. In this regard, the Northern Indigenous peoples from the Northwest Territories, Yukon, and Alaska will meet in Yellowknife next week.

This level of participation of Indigenous peoples is unique in international fora, where such groups are ordinarily observers and not participants. In this way, the council and the AEPS break new ground in creating a framework which allows those who are directly affected by government policies—especially the Indigenous peoples, who are in most cases the majority in Arctic communities—to participate in the discussion of the issues which affect their lives and to influence the decision-making process among the member governments. We will have for the first time the Arctic's peoples and governments formally identifying and acting on priority issues of common concern. In essence, we will have for the first time a senior political forum benefiting the peoples of the Arctic at the grassroots level by providing them with an opportunity to address many local, regional, and national issues internationally for discussion and action among the Arctic countries.

For example, as indicated in Terry Fenge's paper for this conference, it is said: "Principles of environmental stewardship are premised on a recognition that each individual's actions have environmental, social, and economic significance, and therefore all individuals

have a role to play in contributing to sustainable development." I believe that the Arctic Council, with its policies of inclusion and direct participation, will solidly advance environmental stewardship and other key principles for the Arctic.

As I mentioned earlier, in order to succeed, the Arctic Council will have to be able to promote cooperation, the sharing of information and expertise, and to bring political focus and concerted action in resolving the many issues which affect the circumpolar north. Other initiatives, such as the AEPS and the Northern Forum, have been addressing some of these issues with varying degrees of success. These matters go beyond those related to the protection of the environment and include the economic development of Northern regions; the improvement of social and health conditions in Northern communities; the sustainable utilization of land- and sea-based renewable and nonrenewable resources, including the designation of parks and protected areas; the promotion of circumpolar trade; the government of transportation systems on land and sea; the development of communications technologies tailored to Northern needs; the development of tourism and other entrepreneurial activities with the full participation of Northern communities; and increased cultural exchange in such areas as education and the arts.

One of the most essential objectives of the Arctic Council will be to advance in specific ways the principle of sustainable development. Sustainable development refers to planned development which is clearly within the carrying capacity of Arctic and global ecosystems. Such development must contribute to a safe and healthy environment, as well as safeguard the cultures of Indigenous peoples and respect their fundamental rights, values, and priorities.

When development is initiated by others, concrete steps must be taken to achieve an adequate measure of balance through the direct participation of Indigenous peoples through all stages of the planning process. Environmental and social impact assessment and monitoring are basic requirements. Also, we must ensure that the benefits of development accrue to

Arctic peoples in a manner acceptable to them. The sustainability of planned development should be measured in terms of both present and future generations. Indeed, the viability and prosperity of our Northern communities are the guarantors of a better future for the young people who live there.

This means balanced and appropriate development at a pace and on a scale to which Northerners can adapt. There is a need, however, to create a sustainable economic base for Northern communities in order to preserve their future and decrease dependency on governments. This issue has become pressing for a number of countries, including Canada, in view of the current economic, political, and fiscal conditions which we face as a nation.

In conclusion, I would like to reiterate what I stated earlier. The time is right for the creation of an Arctic Council. We have established the principles and objectives under which the council will operate, and based on what we have learned from the accomplishments of the AEPS, the council will reinforce the existing objectives and build upon its work. We know that there will be changes, and what is being proposed is not perfect and will also evolve with time. I agree with Dr. Young when he states that the success of the council "will depend upon the capacity of the Arctic Eight to make and implement appropriate choices regarding such matters as the assignment of tasks to the council, the representation of nonstate actors, the relationship between form and function in meeting organizational needs, the inclusion of bottom-up perspectives, and links to the outside world." I look forward to working with my colleagues in other nations to address these and other matters.

I would like to take this opportunity to thank you, the parliamentarians, for your past involvement, and I look forward to your continuing support. I also welcome any questions or advice that you may have. Together we can work toward ensuring that the Arctic Council meets the needs of the North and its peoples and becomes a unique forum in seeking consensus-based solutions for problems and challenges facing the circumpolar region.

Comments by Indigenous Peoples

**Address on Behalf of the Sami
Parliaments
in Finland, Norway, and Sweden**

Pekka Aikio
President, Sami Parliament in Finland

(Delivered by Sigrid Stångberg, Member of
the Sami Parliament in Sweden)

It is good to start by stating the fact that the Arctic no longer is the remote, almost inaccessible, pristine area on the cap of the northern half of our globe. On the contrary, it is extremely sensitive ecologically and linked closely to the rest of the world. Nevertheless, the Arctic and the near-lying sub-Arctic have provided good living conditions for the permanent residents in the Arctic, Northern Aboriginal people and the Sami people from northwestern Eurasia included.

The living conditions of the Indigenous peoples of the Arctic are greatly affected by the impact of global and outside forces, not only in an ecological sense, but also in terms of international trade and decision making. One can mention boycotts and bans by animal protectionists or, on a smaller scale, in the Sami land, the continuing competition or struggle over the use of reindeer pastures in northern Scandinavia, which are small in area when compared with the grazing and hunting lands in North America.

The Arctic continues to have great military significance. In the global sense, the natural resources—forests, fish, minerals, oil, and gas—are among the richest and have made the Arctic one of the most desirable and important targets in economic planning worldwide.

The Indigenous peoples within that area once utilized the renewable resources of the area for their own good and sold them. These people were able to continue the use of the resources for hundreds and thousands of

years because they had based their economy on the principle of the sustainable use of resources. Today, the Indigenous peoples stand in a minority position in the area and lack sufficient political and economic power to influence development in the area where they live.

We therefore have welcomed the initiative by the Government of Canada to establish the Arctic Council where the Arctic governments would cooperate, in good understanding, with the permanent residents of the Arctic, the Indigenous peoples, which then might help those people to gain sufficient power to influence the decision making by the governments in matters affecting their vital issues.

When Arctic countries cooperate within the vast Arctic region, it safeguards and balances secure development within the region. This development is based on scientific, technological, and commercial cooperation, as well as on cultural interaction and on tourism. As a central factor, one sees the need for further cooperation in environmental activities in order to harmonize the utilization of nature.

This cooperation is implemented on a regional level by dividing the power and the responsibilities into different areas. This cooperation must also include the representation of the Indigenous peoples. As I see it, the traditional knowledge of the Indigenous peoples on the sustainable use of renewable resources should be combined with the actual knowledge of the majority societies in the technological and economic utilization of nonrenewable resources. This, however, requires revision of the political and legal position of the region's Indigenous peoples.

The position of the Indigenous peoples has been improved by national legislation in some states, such as Canada, Finland, and Norway. In addition to that, Norway has ratified the ILO Convention no. 169, and the barriers to ratification are under clarification in some other countries. The Indigenous peoples themselves are, however, in a state of weakness due to long-lasting colonization and continuing assimilation.

In order to let the Indigenous peoples better influence development within the Arctic region, I ask the

governments to pay greater attention to the promotion of the political, social, and economic situations of the Indigenous peoples. It is necessary that the Indigenous peoples of the area obtain sufficient power and responsibility to contribute to the development of their home areas. The Indigenous peoples must also receive an equitable share of benefits from resource utilization within the area.

We cannot accept the fact that the benefit from the use of renewable and nonrenewable resources in the Arctic are for the good of the people living outside the area, whereas the disadvantages stay locally. It is not desirable that the renewable resources within the areas inhabited by the Arctic Indigenous peoples are utilized so completely that it leaves a wasted land with people having their cultural fundamentals destroyed.

The traditional way of conservation of nature included the strict protection of some individual species of flora and fauna. That can be successfully implemented only when combined with the needs of the local users. It includes the understanding and the acceptance of Indigenous traditional knowledge. In the background paper for this session, Dr. Oran Young has observed that people who depend on harvesting renewable resources on a continuing basis have strong incentives to conserve both the resources themselves and the habitats on which they depend. Mostly the uses of renewable resources are embedded in cultural practices which retain their vitality.

Dr. Young seems to be willing to say much for supporting the consumptive use of the Arctic's renewable resources as a means sustaining the Indigenous cultures in the high latitudes. That wisdom is one of the most important prerequisites for the successful protection of the Arctic environment: to protect the Arctic culture which then will protect its own fundamentals in the environment.

The long history of the Indigenous presence in the Arctic justifies understanding the human Indigenous communities as essential living parts of the environment—the local ecosystem. I especially refer to cases when governments are going to establish large protected areas as national parks. It may also include cases where the interests of outsiders can be

excluded, if necessary, for the purpose of protecting nature.

The vast Arctic area is vulnerable, solid, and inhabited by Northern Indigenous people. We prefer the establishment of an international body to evaluate the prerequisites of the utilization of the Arctic rather than leave the decision making to national governments only.

The fate of Arctic regions must not become like that of the Titanic, when the gorgeous ship was sinking while the orchestra was playing soft music. The Arctic governments must act sooner rather than later.

Please accept my affirmation that we, the Sami people of the Arctic region, are fully willing to cooperate with the governments for the good of our future and for the health of our environment. I wish the Arctic Council to be established as soon as possible.

Statements

Iceland **Árni Johnsen**

On behalf of the Iceland delegation, I would like to emphasize our support of Mr. Haarde's viewpoint on the importance of formally linking parliamentary work with the work of the Arctic Council. Our experience from the Nordic Council has been very successful. We have both a ministerial committee and a parliamentary committee. This leads to the admission of a variety of viewpoints from both government as well as opposition, which in turn makes it easier to process cases through the parliament. Going through a truly democratic process, does not mean neglecting a nation's independence or power to decide, but stresses cooperation in solving problems for the benefit for every nation.

A common thread in all these problems we are discussing is that they do not obey any geographic borders. This process I am suggesting will make it

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easier to open new possibilities in our striving to solve important questions and problems, problems of people on the northern end of the earth. Do not forget we are living in some of the most unpolluted parts of the globe in an environment that is very fragile.

The west Nordic nations, Greenland, Iceland, and the Faeroe Islands, are based on hunting. We have always based our survival on the sustainable development of natural resources. The basic philosophy of these nations has always been to use knowledge and experience in order to ensure the balance between the use of resources, on the one hand, and their protection, on the other hand. The sovereignty and the very existence of these nations depends in all aspects on this balance. It is important for us to learn from other Arctic nations and their experience with this delicate balance. It is, therefore, important to work together in solving the problems addressed by this conference.

I share the view of many other delegates that the absence of the United States from this conference is unfortunate. It will be the task of the future to attract the United States to this forum, even though it may require the use of force, the use of arguments and facts, or by snaring the buffalo cowboy style. If the government of the United States is reluctant, I suggest we turn to the state legislature of Alaska. This way we would bridge the gulf that seems to exist between our views and theirs.



Norway Reidar Johansen

In my intervention, I will concentrate on the utilization of natural resources and the rights of Indigenous people.

Indigenous peoples' rights are vested in a long range of international agreements and resolutions, as well as customary international law on human rights, including the UN system, in particular, and also within other organizations.

Today there is the common understanding that if Indigenous peoples are to survive culturally, it is necessary to recognize their rights to land and natural resources, their rights to their own economic and political institutions, and their right to practice their own language and religion, and that states have to secure these rights.

In this connection, I would like to refer to the UN Covenant on Civil and Political Rights, Article 27, which reads as follows:

In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion or to use their own language.

This provision is the core legal norm in international law concerning minorities. Many Indigenous peoples live in close relation to the land and natural resources, and agriculture, hunting, and fishing are often essential elements of their culture. Article 27 protects the rights to natural resources to the extent necessary for the maintenance and development of the culture of different Indigenous groups.

From my point of view, this question—protecting the rights of the natural resources—goes far beyond so-called traditional living. I am talking specifically about exploitation of resources by national or multinational industries—more or less controlled by national governments. I am talking of local control, local political influence, and control by the Indigenous people of the actual region.

In Norway, we have had a debate for quite a long period on what status the Sami Parliament shall have in the decision-making process concerning the exploitation of different natural resources. This debate reached a new high after several big multinational industries showed a rather great interest in searching for different mineral resources. This debate is not yet concluded. From my point of view, the Indigenous people concerned in such matters must have significant influence.

I will now turn to the ILO Convention no. 169 concerning Indigenous and Tribal Peoples in Independent Countries. Norway has ratified this convention. Important articles deal with the rights of ownership and possession of the peoples concerned over the lands which they traditionally occupied, emphasize the need to respect the collective spiritual and cultural value of the land, and state that the rights of ownership and possession shall be recognized regarding land that Indigenous people lived in.

Yesterday's presentations—especially those by the representatives of the different Indigenous people—contained many warnings. Warnings of the environmental situation. Warnings of the heavy pressure from industry to exploit the rich national resources. I hope that the next conference in the Arctic region will find that all the member nations have ratified the ILO Convention no. 169.



Russia Vladimir Goman

I am here in two capacities: as a member of the Council of the Russian Federation and also as a leader of one of the major regions of Russia. I want to talk a bit about my region.

It is 750 000 kilometres in area. The population is 500 000. Its main riches, of course, are its human resources. Apart from that, there are major natural resources in this area. About 90 percent of all Russian gas and 7 percent of the world gas is developed on the Yamal Peninsula. Every year, 55 billion cubic metres of gas are produced. In the territory of our *okrug*, we produce 1 billion tonnes of oil, and the Yamal/Europe gas pipeline starts at the Yamal Peninsula.

As a federal parliamentarian representing a subnational entity of the Russian Federation which is in the Arctic, I am interested in a balanced ecological, environmental Arctic doctrine in the north of Russia. In August, there will be a federal commission for the Arctic in which I will be participating. When we speak of a balanced Arctic doctrine for the Russian

Federation, we mean, above all, taking into account the national interests of the Russian Federation by the parliamentarians representing different regions, with priority given to international agreements on the Arctic.

We also wish to enshrine in the constitution the principle of state policy for the Arctic for Russia, which includes strict delineation of the rights and obligations of the Russian Federation and the regions within the Russian Federation, including my autonomous *okrug*. In the Russian doctrine, we should see recognition of these regions as partners in implementing the state Arctic principle and policy.

I would like to bring to your attention the preamble of the decree of the charter of the Yamal-Nenets autonomous region. In the circumpolar zone and the development of resources in that zone, in the interest of the Russian Federation, the local government goals should include social and economic development of the regions of the extreme north and the circumpolar area. We took our first steps in December of last year. The *duma* of our district signed an agreement on cooperation between the executive branch of power in our *okrug* and the state committee on the development of the north of the Russian federal government.

As a foundation of the government, we have included the principle of the federal bodies of power, interacting with the regional government of the *okrug* in Arctic issues. The balanced doctrine of the Russian Federation includes enshrinement of state immunity for the Arctic regions within the Russian Federation. Enshrining the principle of state immunity for the Arctic regions will mean recognition by the Russian Federation of their status as a region of the federal government and the need for legislation of specified and designated norms for the region.

There will be national norms and federal norms, and the doctrine must be humanitarian and oriented towards social issues. The social orientation of the doctrine must include clearly delineated factors, goals, and a legislative basis for federal and regional policy.

With respect to the Aboriginal population, in our *okrug*, unlike the majority of other regions, we have

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a separate chapter on the social policy of our *okrug*. In the sessions of the federal parliament, I, as the governor of a major Arctic region, follow the principles that our main regional legislation, the charter of our *okrug*, is what I use to guide myself by. Using the Arctic doctrine of the Russian Federation, I will be sticking to the principles that I have spoken about today in my short talk.

I would like you to support our proposal to hold the third parliamentary meeting in Russia; in particular in the Yamal-Nenets district or *okrug*.



Sweden

Axel Andersson

I would like to take this occasion to address this distinguished assembly with a strong plea for parliamentary influence over the political processes relating to environmental protection and the fulfillment of the goal of sustainable development in the Arctic.

The need for parliamentary commitment is underlined by the possible conflicts of interest that may arise over the future development of the Arctic region. The goals pronounced to this end are an indication of the possibly long and difficult way that we are now entering. First, we want to protect the very vulnerable Arctic environment and preserve its unique biological diversity. Second, we also want to promote the special interests of the Indigenous peoples, the reindeer breeding and the fishing and hunting cultures of the Arctic. Third, we want to contribute to different aspects of achieving sustainable development in the whole region. Balances, compromises, and agreements will necessarily have to be arrived at. It is my strong conviction that the parliamentary dimension will facilitate this work. In fact, it is imperative in the approach to the complex issues of the Arctic.

It is the task of parliaments and of parliamentarians to give voice to public opinion in order to exert influence over government. In the same way, an international parliamentary representative body could reflect the

broad international public opinion in order to exert influence over joint, cross-national governmental decisions. Nor should it be forgotten that the contributions by parliamentarians will be indispensable in the efforts to mobilize popular support for environmental protection and sustainable development in the Arctic.

In creating an international mechanism for addressing the issues with regard to the special situation of the Arctic—the solution to the common social and environmental problems as well as the promotion of the economic potentials that are our joint heritage—parliamentary influence and control are essential. Formal provisions must therefore be made for establishing a parliamentary dimension in future Arctic cooperation. By including parliaments and parliamentarians, we will counteract any risk of a democratic deficit in our work towards the goal of sustainable development in the Arctic.

In summing up, I suggest that, first, this conference underline the importance of parliamentary influence in the overall development of the Arctic region in active dialogue between governments and parliaments on Arctic issues. The addition of a global parliamentary dimension, directly linked to the populations of the states and self-governing areas involved, will facilitate the work of addressing the complex issues in the region.

Second, I suggest that the governments in the charter for the establishment of an Arctic Council include provisions concerning the Standing Committee of Parliamentarians of the Arctic Region as a part of the Arctic cooperation structure, and express in the charter their interest in a close cooperation with the Standing Committee as an advisory body.



Canada

Raynell Andreychuk

I would like to add the voice of the Canadian parliamentarians to that which has been already stated by various representations, that parliamentary

influences must be felt at the Arctic Council. I think that our position is, perhaps, negotiable as to what form, but today would be an appropriate moment to pay tribute to those parliamentarians who have been steadfastly and tenaciously fighting for an Arctic Council. They come from all parties, all philosophies, and all countries in the Arctic. Our delegation would like to pay tribute to those of you in the room and many who continue to argue for this. I think that is the most fundamental point that we can make this morning.

We also regretted the absence of any US representation or presence at the first conference of Parliamentarians of the Arctic Region. We deeply regret that the United States has again absented itself from this conference.

We believe that the Arctic, more so than any other global region, has issues that transcend jurisdictional boundaries and demonstrate the need for international cooperation.

We strongly believe that fair, equitable, and responsible democratic governance is a core principle to our vision of sustainable development. Canada has been working toward the timely settlement of land claims, and we continue to support comanagement between Aboriginal peoples and government.

Canada also recognizes the importance of incorporating traditional ecological knowledge in all aspects of decision making that affect the Arctic.

We recognize that effective Arctic governance should be functional at all levels of society including international, national, regional, and, importantly, local and community levels. It must include Aboriginal leadership and governance at all levels.

We commend and support the efforts of the Nordic Council in encouraging and fostering cooperation among circumpolar countries and support the need for a coherent structure of international cooperation in the region.

We recognize that increasing interest and efforts in the Arctic have been occurring through many

multilateral initiatives. However, we are concerned that arrangements in dealing with certain Arctic issues are not as productive as they might be.

It is crucial therefore that the Arctic Council consider the full range of Arctic issues and initiatives, while building a coherent structure of international cooperation in the region.

We, as a delegation, therefore recommend strongly, and without further delay, the establishment of a broad and encompassing Arctic Council.

We further recommend broad participation within the framework of the Arctic Council, which respects and acknowledges Aboriginal rights and gives full participation to Aboriginal peoples. We note that fair and equitable governance is a key to sustainable development. Self-determination would be strengthened by the full participation of Aboriginal peoples in all government issues and arenas.

We further recommend that we lobby all our governments to make the issue of regional, national, and international Arctic governance an integral part of their policies.

We strongly reiterate that all Arctic countries should be represented in discussions of these important issues of governance in the Arctic.

In conclusion, we recognize that there is an opportunity to launch the Arctic Council as an initiative that will address international challenges and problems in the Arctic. It cannot be delayed any further.



Greenland **Knud Sørensen**

I think it is essential to focus today on the concept we have in Greenland with respect to the development here in Canada of the Nunavut territory in 1999, and also with respect to the global aspirations that allow Indigenous people to gain more autonomy and more political strength.

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The year 1979 was the year when home rule was inaugurated in Greenland. That happened after the solid aspiration for home rule by Greenlandic Inuit and, of course, there were negotiations leading up to home rule in 1979. There were negotiations with the Danish authorities, and we had a referendum where the vast majority of the Greenlandic people voted in favour of home rule.

According to the Home Rule Act, we formed our own parliament in 1979, and we have our own local home rule government. The purpose of introducing and inaugurating home rule in Greenland was, of course, so that we would take over political and economic responsibility for areas that were earlier handled in the Danish parliament, in fact, by the Danish government.

Now after seventeen years of home rule, we have transferred all areas that we agreed upon during the negotiations in the 1970s to the Greenland authorities, except for two areas: foreign policy, which is still the responsibility of the Danish government, and the judicial area, which is under close monitoring within our commission right now. The last area we took responsibility for was the health centre four years ago.

Of course, there is a financial need to run these areas. That was part of the home rule agreement. We negotiate with the Danish government every three years for block funding from Denmark to Greenland. So far, there have been no difficulties to speak of in the negotiations. We receive an amount of DKK 2.4 billion annually as a block grant.

We have not regretted at all that we have home rule. I cannot go into details, but it has brought a very strong psychological lift to the identity of the Greenland people.

The transition period from being under the Danish authorities to developing home rule has not been easy. There have been quite a few problems. There has been a learning process about democracy in Greenland, and a very significant increase in the global awareness of other people's situations; it has opened Greenland towards the world.

Thinking of the two very different peoples we are talking about, the Danish people and the Greenlandic

people have very different environments and surroundings. Nonetheless, we have been able to get along well. We have a mutual respect in Greenland, and we have quite a large population of Danish people in Greenland. There is a mutual respect that is being seen in both Greenland and Denmark since home rule was introduced.

In conclusion, let me stress the importance of the position of the Greenland home rule parliament. We wish to see the creation of the Arctic Council as soon as possible, and we are fully behind it.



Finland
Tarja Kautto

We have been able to hear from the speeches given here that there is not going to be a lack of topics for everyone. On the contrary, the problem is going to be which items will be raised as main items.

During the last years in international cooperation, it has been interesting to notice that cooperation has been established around the seas. The European Union has established a Mediterranean program, and we, the Nordic countries, are trying to establish a Baltic Sea program, which would bring us cooperation with Russia, the Baltic countries, Poland, and Germany.

I personally think that cooperation between Arctic areas should be raised to the same category. Basically the issue is the same—common concern over how we can preserve nature and protect the living conditions of people.

I can well understand that the new opportunity for cooperation raises political interests among the people living in the Northern areas. No doubt, these people are the real experts of their own environment. However, I hope that these questions related to nationality and civil rights would not complicate the management of the other issues. I will say this, because at least in my country, it is quite difficult for us who live in the southern part of Finland to understand the relevance of the disputes of the Lapps

over who is a proper and genuine Lapp and who is not. Internal disputes between southerners and Northerners are not benefiting anyone. We have to realize how easily these could be provoked. Already the people living in Finnish Lapland accuse the other Finns that they will preserve the whole Lapland if there are any conflicts of interest. I hope that the Arctic cooperation would further promote the willingness of Northern areas and people to cooperate. Unfortunately, at least in the Nordic countries, the people living in the North opposed European Union membership.

Finally, I would like to stress that while effective cooperation needs a secretariat, I hope that this

secretariat would be as small as possible. Emphasis in the future must also be given to direct contacts. I also hope that in the future we will be able to be more focused on certain areas. I myself consider the environmental issues the most important.

A representative of Greenland proposed that we should introduce wider interpretation services for all languages at the table. There are some grounds for that, but it would also mean a new expenditure. Personally I hope that we are able to agree on the use of the English language. Those who cannot agree with that could organize the needed interpretation at their own expense.

Theme IV: Security Issues

Background Paper

Political and Military Aspects of Security in the Arctic

I. Political Principles of Security and the Arctic Region

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1.0 PRINCIPLES OF SECURITY FOR THE NEXT CENTURY

Security in the Arctic region is affected by circumstances, traditions, issues, and factors specific to the circumpolar north, as well as by fundamental changes in international relations in general.

The Arctic region is part of the broader "security structure embracing States from Vancouver to Vladivostok" (Budapest Summit Declaration 1994). Regional security building in the Arctic benefits from the trend towards cooperation, reconstruction, and unification under way in the domain of the Organization for Security and Cooperation in Europe (OSCE), which was dominated during the cold war by East–West division and confrontation.

Arctic regional security is not only connected with problems arising from the East–West legacy, however, but rather also with issues that have a North–South character, in particular in the economic and ecological fields, as well as in the area of minority rights. Furthermore, as the Arctic region cuts across

state territories of the Eight, the security agenda deals not only with interstate relations but also increasingly with intrastate or centre–periphery aspects.

There are expectations that the strengthening of civil society, the key role of substate actors, the trend towards decentralization of power, and the preoccupation with self-reliance as a human rights and welfare strategy will make the Arctic into an exception to the traditional ways of producing security.¹

Although there are significant regional aspects in Arctic security, it should be viewed in the context of wider change in the international order. The Arctic is connected with the process of political and economic integration and with the global military constellation.

As a historical turning point in international relations, the period dominated by the end of the cold war and the subsequent period of transformation have been accompanied by new definitions and principles of security. The search for a new and stable international order, however, cannot result in an overall peace settlement such as after world wars in history. On the contrary, it takes place in a complex and disorderly environment and remains an open-ended process. It is in such a dynamic context that regionalism in the Arctic is facing its challenges and opportunities.²

An extended concept of security is a ubiquitous idea of the 1990s. A leading theme among both theorists and practitioners is centred on individual or human security. The security of groups and individuals is raised alongside—or even above—that of nations and states as the moral and political objective. In the new political situation, security can be reduced to its philosophical core definition, governing the relationship between the individual and the state or society. An individual finds security in freedom from threats against his or her basic values, welfare, and integrity.

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Individual security can be achieved only as a collective good. In fact, another notable aspect of current thinking on security is the belief in internationalism: the role of information, communication, trade and exchange, and, in particular, international institutions in producing security (Goldmann 1994). It is not only intergovernmental organizations that will shoulder the responsibility for ensuring security; nongovernmental organizations, public-opinion formers, and institutions of regional or local government will have a larger role as well.

Security is no longer an abstract concept or a mere matter of prestige and power. It concerns the survival of humankind and the biosphere, the physical environment as well as the social environment. Furthermore, security concerns all the various aspects of human life. A comprehensive concept of security, developed within the OSCE, extends from political and military to human, economic, and ecological dimensions.

The idea of "a common and comprehensive security model for Europe for the twenty-first century," which is under discussion within the OSCE, brings together the various dimensions of security. The decision taken by the Budapest Summit 1994 aims at establishing a common ground of comprehensive, cooperative, and indivisible security (CSCE Budapest Document 1994; Fifth Meeting of the Ministerial Council 1995).

- The **comprehensive** concept of security departs from the traditional notion based on political and military aspects. It relates to peaceful relations between states and respect for human rights as well as economic cooperation and ecological solidarity.
- **Cooperative** security is functioning through instruments and practices for stability promotion, conflict prevention, and dispute settlement and reconstruction. As a rule, their use is based on consensus. In the model of cooperative security, collective action or international intervention in general does not have the enforcement element included in collective security under the specific competence of the United Nations Security Council. Furthermore, cooperative security is not an exercise in power balancing, where the military force and the

security of the state occupy the central position. Security is reached by cooperation, as common security.

- **Indivisibility** as an aspect of security reflects the fundamental goal of unity that is set for the new OSCE–Europe. As the political scene changes and the old divisions are overcome, it is essential that no new divisions or gaps are created. Of particular significance are OSCE principles that guide a legitimate and acceptable policy as states continue to search for national or collective security:
 - While all states are free to choose or change their security arrangements, national security interests should not be pursued at the expense of others.
 - No spheres of influence are legitimate and no privileged or grey zones of security are acceptable. Policies should aim at security in the OSCE region as a whole.
 - Non-use of force continues to be a basic norm in international security. National defence policies must be adapted to new cooperative principles of security, predicated on the adoption of such guidelines as the sufficiency rule for defence capabilities, the democratic political control of armed forces, and the observance of international humanitarian law in the internal and external use of armed forces, adopted in the Code of Conduct on Politico-Military Aspects of Security (CSCE Budapest Document 1994).

It is essential for international security that the common principles, adopted in politically or legally binding forms, in practice act as guidance and really affect decisions of governments and other actors. The rule of accountability lies at the heart of modern security. States are accountable to each other for observance of the OSCE principles and commitments—enshrined in the Final Act of Helsinki and the Charter of Paris for a New Europe and developed further in derivative documents.

Security is not created for a static situation; it is predicated on internal and external change. Individuals must show solidarity and states must

provide support for countries and societies undergoing transformation to democracy, market economics, and military reform. Ultimately, the change aims at expanding the zone of democratic peace.³

Structurally, the post-cold war security order is complex, even though harnessing the capabilities of the OSCE as an inclusive organization is a key element. According to a ruling of the Helsinki Summit 1992, all European and transatlantic institutions and organizations are to work together for security and stability in a complementary and mutually reinforcing way (CSCE Helsinki Document 1992). Coordination and linkage between international security-related organizations is a central element in security policy.

The policies of the institutions and organizations, including regional organizations, in the OSCE domain are guided by the shared norms and values and the common principles of security. Furthermore, established Western institutions such as the European Union, the Western European Union, NATO, and the Council of Europe have adopted a policy of support, partnership, and enlargement eastward to strengthen and extend the security community that grows with democratic transition.

2.0 SECURITY POLICY: THREE FUNCTIONAL SECTORS

The inclusive and complex notion of security reflects opportunities of a new and tumultuous age, which must be turned into a viable strategy of security policy. There are three broad functional approaches to a security policy which responds to challenges, concerns, problems, and threats related to comprehensive security. The substrategies have to be pursued in parallel, as they reinforce and complement each other.⁴

(i) **Policy of stability promotion.** To create a sustainable basis for stability, measures are needed to support transition to democracy, market economics, and legitimate defence. An important principle is inclusiveness, opening the door to participation in political and economic integration. Policies aim at affecting the root causes of conflict, providing reassurance, and building confidence. The ultimate aim is

prevention of conflict and other threats to security.

In the Arctic region, stability promotion is the dominant and active sector of security policy. Overcoming political and economic gaps between Russia and its neighbours in the North is a key goal in regional security. Russia's natural resources occupy a central role in regional development with Western participation and support. Protection of the identity of Indigenous peoples is a specific item on the Arctic human rights agenda. Civic society is an essential element in Arctic change, which is supported by the principle of subsidiarity applied in decision making within the EU and the wider international community. The Northern policy of the EU and the effects of NAFTA cooperation tie the Arctic region with broader structures of integration, globalization, and modernization.

(ii) **Conflict management.** Collective action or other forms of intervention by the international community in disputes and conflicts constitute a growing sector of security policy. Measures and mechanisms have to be in place for use in the different aspects and phases of the conflict cycle. Such policies deal with early warning, conflict prevention, crisis management through political means such as mediation missions and legal instruments for peaceful settlement of disputes, military crisis management such as peacekeeping and peace enforcement, and reconstruction and post-conflict rehabilitation.

In the Arctic region, maritime disputes have traditionally provided cases for arbitration and conciliation. Indigenous rights are part of the implementation of the international human rights regime. Ecological and resource conflicts, including homeland issues, may be candidates for future dispute settlement.

(iii) **Military-strategic stability.** Countries maintain policies of separate defence or collective defence for the task of preventing military threats and countering military aggression against political independence and territorial integrity. Protection

of fundamental values related to the survival of states will remain a key task of security policy. Simultaneously, promotion of strategic and military stability through transparency, openness, and arms control is an important element in the military security policy of the new cooperative era.

In the Arctic region, the main item on the military agenda remains strategic nuclear stability and arms control between Russia and the United States. Dismantlement of nuclear weapons will be an increasingly significant factor of ecological security in the region. The naval competition is mitigated by the political atmosphere, but naval arms control remains outside the negotiation agenda. Conventional arms control extends to the Arctic region mainly through the CFE treaty and its flank regime, which covers the northwestern part of Russia. Furthermore, the regime of CSBMs adopted within the OSCE is applied as appropriate in the Arctic regions. Enlargement of NATO is part of the future agenda in the North due to its impact on the Russian–NATO relationship.

With the goal of indivisibility of European security becoming more realistic, it is the very complexity of the new situation that has made regional and subregional solutions not only more feasible but also more necessary. Even though OSCE-wide arrangements prevail, regional solutions are sought and encouraged as complementary measures. A linkage with the overall regime is a key issue, however, in all arrangements and efforts related to regional security.

The Pact on Stability in Europe, concluded in 1995 and transferred to the OSCE for follow-up, has relevance for Arctic regional security as an innovative approach. The pact was introduced as part of the pre-accession strategy of the EU towards the central European and Baltic states. Stressing the importance of the settlement of border and minority disputes, the pact has introduced good-neighbourliness as a key security principle. Furthermore, the pact has introduced the instrument of regional round tables, convening not only regional actors but the major players as well.

In arms control, regional measures have been on the agenda in the OSCE Forum for Security Co-operation. A special emphasis is placed on regional security problems in the framework of arms control to be developed on the basis of the Budapest Decisions. The Dayton Agreement has engaged the OSCE in military confidence and security building and arms control for the parties to the conflict in Bosnia-Herzegovina and the former Yugoslavia, as well as, in the longer term, for southeast Europe in a wider sense. Tentative ideas have been put forward on CSBMs in the Nordic and Baltic context, but no negotiations are under way.

In the CFE treaty, regional aspects are represented by the flank rules, which are under reconsideration in the wake of the dissolution of bipolarity (Johansen 1995). Furthermore, special CSBMs have been produced—although they have been rarely used—by the CSCE/OSCE in the Vienna Document, such as the Mechanism for Consultation and Co-operation as regards Unusual Military Activities and Stabilizing Measures for Localized Crisis Situations.

3.0 REGIONAL SECURITY POLICY IN THE ARCTIC

As a phenomenon and a policy, regionalism is an integral part of international relations today.⁵

Regionalization, as a passive form and a natural result of regionalism, is a long-term process driven by such subjective factors as a growing common identity, culture, history, security interests, and such objective factors as geography, economics, and geopolitics.

The Nordic community of states (*Norden*) is such a product of long history. The Nordic states assume a special interest in, and responsibility for, Arctic regional cooperation (Co-operation in the Arctic Region 1995). Arctic Indigenous peoples form transnational communities that have recently become more active political actors. A common identity for the Arctic region as a whole is sought, as the concept of the Eight is being introduced and strengthened in international relations.

Region building, as an active form and a conscious objective of regionalism, is a purposeful political

activity which builds upon historical and mental regionalization. Pursued either from above or from below, region building finds a concrete expression in new institutions. Starting with the older process of North Calotte cooperation, recent history testifies to a growing number of cooperative activities: the Rovaniemi process, Barents cooperation, interregional cooperation within the Northern Forum, and the Arctic Council idea under consideration.

Region building can also be a mental reconstruction, based on historical symbolism. Philosophical origins for the Baltic Sea region have been found in the fourteenth- and fifteenth-century Hanseatic commercial league and for the Barents region in the eighteenth- and nineteenth-century Pomor trade (Tunander 1994).

Regionalism involves the emergence of new effective actors besides the sovereign state. Regions will not replace states as the locus of sovereignty and power, but, in particular, region building that grows from below may bring about new constellations of self-determination and power sharing.

The complexity of actors and levels is visible in Arctic cooperation. The Northern Forum is an institution for interregion (provinces, counties, cities) cooperation in the circumpolar north. Indigenous peoples' participation is secured in the Rovaniemi process and Barents cooperation, initiated and driven by governments, and similar solutions are sought for the prospective Arctic Council.

As an intergovernmental forum for consultation and cooperation, the Arctic Council will be based on environmental and sustainable development pillars, but it will enlarge the scope of cooperation to other nonmilitary areas. Hence, the Arctic Council will have a role in Arctic identity formation.

Transfrontier cooperation is a form of regionalism that highlights the role of subnational and subregional actors. It can be based on local initiative, but it can also be part of interstate policies. Border regions are often also peripheral regions like the North Calotte. Barents cooperation is an incentive for transborder cooperation.

Transfrontier and other forms of cooperation between units which are regions within territorial states are an example of security building where substate actors play a key role.

4.0 BARENTS COOPERATION AS SECURITY POLICY

Barents cooperation is an example of the extended security concept at work in the Arctic. It is a highly developed case of regionalism in the whole OSCE–European context.

The Barents Euro-Arctic Council, based on historical, geopolitical, and geoeconomic grounds, is a natural result of regionalization, but it needed effective region building. The council grew up as a new regional institution through political initiatives—with Norway in the leading role—that took advantage of the new opportunities provided by the combination of a new Europe and a new Russia (Eriksson 1995).

As a security-related institution, the Barents Council is an instrument for promotion of stability and transition with a broad agenda of nonmilitary issues and cooperative projects. The council has no competence or institutions for dispute settlement or conflict management (Cooperation in the Barents Euro-Arctic Region 1993; Barents Euro-Arctic Council Third Session 1995).

The Barents Council is a forum for engaging Russia with its Arctic resources in deepening regional and crossborder cooperation. In this perspective as well, Barents cooperation is built on continuing change and reform as a security strategy. In particular, it brings individual security and ecological security to the political agenda as key issues.

The Barents Council provides a channel for the EU's Northern policies. Consequently, Barents cooperation is linked with the process of political and economic integration and its contextual effects.⁶

As a political and economic force for stability promotion, the EU has taken an innovative step in regional cooperation by joining the Council of Baltic Sea States and the Barents Euro-Arctic Council,

which are intergovernmental bodies dealing with nonmilitary aspects of security. The EU has chosen northwestern parts of Russia in the Barents region as a focal region in TACIS assistance programs. Finland and Sweden will channel INTERREG funds for projects in the North Calotte and Barents regions. The EBRD is active in providing venture capital for the region.

Structurally, the Barents Council brings together the governments of Russia and the Nordic countries, as well as the European Union (Commission) and interested third countries as observers. Barents cooperation widens the basis of participation and decision making in innovative ways, encompassing intergovernmental and interregional levels. Local and regional as well as Indigenous representation and participation are provided through the Barents Regional Council, which promotes transnational cooperation and channels local initiatives. A workable linkage is established between the intergovernmental and regional councils, as the capitals control the main sources of financing.

Regionalism and transnationalism meet as security-building processes in Barents cooperation. The political domain of the Euro-Arctic region is filled with a complex structure—territorial states, substate groups, transnational Indigenous communities, and external linkages—that can provide institutions of political authority, points of identification, and bases for activity and initiative for the broad spectrum of actors with their specific security and welfare needs (Eriksson 1994). As a case of post-cold war regionalism, the Euro-Arctic region is a distinct geographical and ecological unit; it is developing as a system of social interaction and organized cooperation and taking its first steps as a regional civil society; but there are no institutions in sight that would make it into an acting political subject in international relations.⁷

NOTES

1. A search for an Arctic as an exception is made—and in the end largely frustrated—by the authors in Heininen et al. (1995).

2. The concept of security is analyzed in the historical-philosophical context by Rothschild (1995).

3. A review of the democratic peace argument and its implementation is provided by Gleditsch (1995).

4. The three areas or sectors of security policy are defined and developed in Keatinge (1995) and Möttölä (1995).

5. For the concepts of region, regionness, and regionalism, see Hettne (1993), Käkönen-Lähtenmäki (1995), and, in particular, Saarikoski (1995).

6. On the policy of linkage between the northern regions and European integration, see Nilson (1994).

7. Using the scale of "regionness" developed in Hettne (1993).



Political and Military Aspects of Security in the Arctic

II. Security in the Arctic Region: Military Aspects in an Integrative Framework

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1.0 INTRODUCTION

In the security perspective, a pressing problem in Arctic cooperation after the cold war has been how to deal with the legacy of strategic military confrontation. One of the basic choices in Arctic states' policies has been between decoupling Arctic problems from extraregional concerns or linking them to each other. There has been discussion about the possibility of addressing regional level problems of security from an integrative conception viewpoint or using another option where civil collaboration is pursued on its own merits without an explicit connection to politico-military aspects of security. Instead of comprehensive security, an idea of civility denoting commitment to more civilized behaviour and transcending the militarization of Arctic matters has been presented (Griffiths 1992, 1993).

The communique by the Nordic Council's International Conference for Parliamentarians on Development and Protection of the Arctic 1993 used in its recommendations the notion where traditional

state-centric, military-focused security is handled separately from comprehensive security except when considering environmental effects of military use of nuclear technology. But there are also studies where states are seen at least partly following a broad conception of security in promoting regional cooperation in the Arctic (cf. e.g., Eriksson 1995¹).

This background paper will underline the integrative qualities of a broad concept of security. It will tackle Arctic security from an integrative perspective, but focus on various aspects of the present and emerging situation in military security such as those of nuclear and conventional disarmament, arms control, confidence- and security-building measures, and environmental effects of military activities. The main purpose of the paper is to highlight the dilemma of the extent to which traditional aspects of security have given way to a new stable constellation of various sectors of security in the Arctic. The aim is not to present solutions, but rather contribute to framing the contemporary security problematic.

2.0 AN INTEGRATIVE SECURITY FRAMEWORK IN THE ARCTIC?

In the global scheme, conclusions are drawn about the multidimensionality of national and international security, with more and more issues having security implications, and about new localization of conflicts in the international system (Rotfeld 1995). Such assessments often advocate broad and integrative perspectives of security. Conceptually, such visions are often difficult to adopt, and it is even more difficult to derive policy-oriented conclusions from them. Much of the new security discussion remains academic, since in practice foreign and security policies of states concern issues which could jeopardize the state autonomy and the international order based on the undisputed primacy of states. The growing complexity of issues due to the rising density and interplay of globalizing and localizing tendencies makes it difficult for governments to meet new challenges. They call for an easy solution, where the status quo provided by continuity of political-military arrangements continues to be tempting, working for the separation of traditional and wider aspects of security.

An integrated security perspective emphasizes that national security, covering a wide spectrum of issues, can be achieved only in an international context. It calls for greater political attention to levels above and below the state, where actors may present their own security concerns as well as claims about other issues having security implications. Normatively, we face the demanding question about limits of a state's policy in front of security dynamics from other levels. The question always remains of *whose* and *what* security is finally at stake.

Integrated security calls especially for a greater awareness of linkages between political, military, ecological, and economic dimensions of security, as well as between state and societal actors with their differing views of security. This assumption leads to policy implications where collective measures are necessary across the whole system, and states have to choose a suitable mix of national, protective, and international preventive and context-sensitive security strategies, where commitment is also important (Buzan 1991, 368–381; Wæver 1994; cf. Eriksson 1995). Linkages should reveal whether threats are unnecessarily given a traditional politico-military label. Theoretically, an integrative concept of security would prescribe in any case a minor role for military security, if pressing issues of international life lie elsewhere than in interstate threats about changing the existing order through violence or sustaining an order by force or threats of force.

On the other hand, states have to take a position in front of the new regionalization (from below) and adapt their own region-building policies to demands of regional and local actors. The prevailing and obviously continuous tendency has been to separate "high politics" from "low politics" in order to avoid conflicts which could prevent increasing cooperation on less "dangerous" fields of policy. This is evident in the Arctic in the institutionalized Barents cooperation, for example, but also in wider circumpolar arrangements. But the limitations of this approach are rather obvious. Since the separation means that issues of politico-military security are confined to other than regional cooperation between states, it actually means that states can reserve a special position for themselves vis-à-vis regional and local actors'

intentions. "High politics" is an area of secrecy, and structures and patterns of this sector have a tendency to be readily available if a new confrontation emerges or would turn out to be necessary from a viewpoint of a single state-actor. So cooperation in "low politics" does not necessarily change or replace "high politics," as is often expected, if the latter is not flexible and transparent enough on all levels of activities, including organizational.

In the Arctic context, the possibility of overcoming the separation analytically and politically is of particular interest, since the region, especially its northern European subregion, has been an area of major military presence and strategic games between two great powers during the cold war era. The military sector visibly dominated Northern security—or, more properly, insecurity—with concrete expressions being that a few major circumpolar settlements like Thule, Bodø, Sodankylä, and towns in the Kola Peninsula were involved in military activities. But at the same time, the Arctic was a region with other low-level conflicts. The often positively regarded stability in the North was conspicuously based on a heavy military-strategic notion. Now that the cold war confrontation seems to be over, the political security of Arctic states has improved, except in Russia, where political security in terms of the organizational stability of the state is *internally* threatened (Bröms 1995). Also, threats to military security, depending on evaluations of possibilities of interstate or intercoalition attack, are generally considered in the Arctic to be far less intensive than before. The existing large military apparatus around the North Pole can be described as being a repository of cold war military technology (cf. Panel on Arctic Security 1993, 6).

Totally changed political relations between former adversaries create expectations that the military machinery is tamed enough not to cause trouble to enhanced policies of cooperation. But the question can still be raised about its meaning from the perspective of an integrative security conception: is it really a "museum," or an organizational structure which *especially in those conditions* is able to prevent or at least slow down progress towards more intensive cooperation in international relations?

3.0 NUCLEAR ISSUES

3.1 Nuclear Disarmament

There is much ground on which to argue that the global nuclear arms race is over. But this phase is not without risks of nuclear proliferation, and at least among some states the thought lives on about nuclear weapons still having a role not only as levers of a political nature but also as tools of states' security. In a sense, the core of politico-military security issues in the Arctic continues to be the nuclear constellation between Russia and the United States and its effects on other developments both in the military dimension of security and in other sectors, e.g., prominently in the ecological dimension, as nuclear waste produced by a state's military technology has risen to the forefront of common regional security problems. The "nuclear problem" unites but also still separates countries with an Arctic reach (cf. Heininen et al. 1995, 32).

Since the 1986 Reykjavík Summit between the United States and the Soviet Union and its result, the INF Treaty² of 1987, we have been able to talk about nuclear disarmament as a prevailing tendency. The START I Treaty³ came into force in December 1994. The treaty will reduce nuclear weapons of both sides down to 1600 delivery vehicles, with 6000 accountable warheads by December 2001. The present level of operational strategic nuclear warheads is about 7800 for Russia, including those still deployed in Belarus and Ukraine, and 7600 for the United States.⁴ All nuclear warheads have been removed from Kazakhstan to Russia and transportations from Belarus and Ukraine are expected to be completed during 1996. The situation changes all the time and elimination has progressed even ahead of schedule (Bulletin of Atomic Scientists 1995a, 1995b; Military Balance 1995–1996).⁵

But the START II Treaty⁶ still awaits ratification in spite of the Clinton–Yeltsin agreement of 10 May 1995 to seek it early. START II will further cut the strategic arsenals by approximately half within the next seven years up to 2003. Most of the remaining 3000–3500 warheads, 1700–1750 on both sides, will

be in submarine-launched ballistic missiles (SLBMs). The treaty will abolish multiple warheads of intercontinental ballistic missiles (ICBMs) and heavy ICBMs altogether. The treaty was presented to the Russian duma on 26 June 1995, but ratification was postponed until after the election. The new duma, again, may be somewhat hampered by forthcoming presidential elections. Ratification faces resistance also because of NATO's enlargement plans which create fear of Russia's isolation. In Russia, the opponents of ratification have connected the issue to the open problem of separating systems allowed in the Anti-Ballistic Missile (ABM) Treaty from an emerging Theatre Missile Defence (TMD), a three-phased US program to counter missile threats against deployed US forces and their regional allies, or see START II as a cost burden or an unfair bargain in terms of strategic calculations (Nazarkin and Jones 1995; see also IISS 1995). In the United States, the Senate ratified the treaty in January 1996.

Negotiations in Geneva begun in 1993 to solve the ABM/TMD demarcation problem have somewhat progressed, but the issue has also been hampered by controversies between the Clinton administration and the Congress within the United States (Helsingin Sanomat 31.1.1996; Military Balance 1995–1996, 16–17, 107–108, 296). Technically, Russia has indicated its capacity to eliminate warheads at a rate of 2000 per year, so there is still time to reach the START II levels on schedule.⁷

The Clinton–Yeltsin agreement of September 1994 signalled the possibility of a START III agreement in the sense that planning for negotiations was started. During the last few years, a renewed discussion among academics and analysts has also started about complete nuclear disarmament (a good example is Goldblat 1995; see also Simpson 1995). One of the arguments for this prospect has been its actual advantage for the United States, since the country cannot be seriously threatened militarily by anything other than nuclear weapons. Furthermore, it is argued that along the START process, the counterforce capability of weapons is further diminishing, and in a changed context that situation paves the way to more disarmament, since making another country's population hostage in a nuclear deterrence game is

politically more and more unacceptable. An old discussion of alternative nuclear postures based on minimum deterrence through radical limitation of warheads has also resurfaced (Forss 1995).

Tactical nuclear disarmament has progressed through unilateral moves by Russia and the United States. The latter has considerably reduced its tactical nuclear weapons during the last twelve years. Since 1988, the reduction has been about 90 percent in warheads. Remaining are bombs, air-launched cruise and anti-submarine missiles of air forces, and stored submarine-launched cruise missiles (SLCMs).⁸ Tactical weapons of the United States abroad are situated in Germany, the United Kingdom, Turkey, Italy, Greece, the Netherlands, and Belgium; this arsenal consists of bombs. Land-based tactical weapons have all been taken out of operational use (Bulletin of Atomic Scientists 1995c).

Russia holds similar categories of weapons and, additionally, artillery rockets, short-range missiles, torpedoes, depth-charges, and nuclear artillery explosives. In January 1992, President Yeltsin declared that Russia would dismantle all of its tactical ground-launched warheads, a third of sea-launched, and half of air-launched, but information about the present situation is not available.⁹ All tactical nuclear warheads have, in any case, been removed from surface ships and submarines in Russia as in the United States. All the tactical nuclear weapons of the former Soviet Union have been withdrawn to storage sites in the territory of Russia since 1992 (Military Balance 1995–1996; SIPRI Yearbook 1995).

An important part of nuclear disarmament is the cooperative build-down of the nuclear weapons complex in the former Soviet Union (FSU) area. known as the Nunn–Lugar Programme (Cooperative Threat Reduction Programme [CTR]); it has supported denuclearization in Russia, Belarus, Kazakhstan, and Ukraine for three years, beginning in 1992. The program gives the framework and so far a total of about 1.3 billion dollars funding for several different projects concerning, for example, the dismantling of strategic weapons, industrial conversion, nonproliferation, re-employment of scientists on civilian projects, and environmental restoration. The

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United Kingdom, France, Italy, Canada, and Japan have also been involved in international assistance for the FSU denuclearization (De Andreis and Calogero 1995).

Nuclear disarmament measures so far have witnessed a continuing reliance on the conception of mutual deterrence, even if the general connection between nuclear and conventional deterrence has been given much less weight than during the cold war. But both Russia and the United States carefully watch their mutual strategic deterrence in their negotiations. When implemented, START II will reduce incentives for a first strike and as such strengthen stability based on deterrence (Nazarkin and Jones 1995). In September 1994, President Clinton approved the Nuclear Posture Review, which prescribes a smaller role for nuclear weapons in US security and a need for a smaller arsenal and an international deterrent posture. The recommended level is understood to be sufficient to deter "a hostile Russian government" and the retention of a reserve force to deter other nuclear powers, even though it will not go lower than the START II (Military Balance 1995–1996).¹⁰ On the doctrinal side, NATO continues to hold nuclear weapons as a last resort, but has not declared any no-first-use. Russia's new military doctrine from 1993 includes an option of using nuclear weapons against non-nuclear countries which ally themselves with nuclear powers and join an attack against Russia or its allies. Similar doctrinal declarations of both Russia and the United States have a deterrent purpose.

In the Arctic region, the basic nuclear force situation in terms of numbers and qualities has not changed considerably during the last few years. The concentration of these assets still lies in the Kola area, where there are twenty-eight strategic submarines with some 3000 warheads in SLBMs. There are also twenty-seven tactical submarines and at least twenty-three surface combatants with launchers for nuclear or dual-capable missiles. Tactical dual-capable weapons of Russian ground forces in the Kola Peninsula include at least twelve SCUD surface-to-surface missile systems and artillery. Nuclear warheads in the area are stored in four major sites in Severomorsk, Sayda Fjord, Lovozero, and Nenoksa (Nilsen and Bøhmer 1994). Minor developments since 1993 have

happened; for instance, the Olen'ya base no longer harbours nuclear-fuelled ballistic-missile submarines (SSBNs) (Military Balance in Northern Europe 1993–1994; Military Balance in Northern Europe 1994–1995).

The United States' SSBNs and the air forces' nuclear arsenals cannot be assumed to avoid the Arctic region in their movements, even if any confirmation of the details is naturally outside research. The infrastructure related to the nuclear standoff in the most northern parts of North America and the Arctic Sea has undergone only minor changes since the cold war ended. These aspects of the so-called militarization of the Arctic include the continuing military integration and increased cooperation between Canada and the United States in North American Aerospace Defence (NORAD) systems, the North Warning System (NWS) for advanced air surveillance, cruise missile testing in Canadian Arctic airspace until early 1994, and the role of air bases in Alaska, Greenland, and Iceland in keeping up strategic deterrence¹¹ (Military Balance 1995–1996; Lindsey 1988; Simon 1992).

Nuclear disarmament with political developments has not so far changed the role of the so-called "submarine bastion" in Russia's and the United States' strategy. Prospects of nuclear developments, if the START II treaty proceeds, indicate for the Arctic region that if and when the treaty enters into force, Russia could deploy roughly all of the allowed SLBMs to its thirteen newest submarines; but higher numbers also seem probable, if target density and too much strategic value based on few units is to be avoided. It is naturally too early to anticipate how many of them might be based on the Kola Peninsula, but in any case, a majority, since other locations, notably the Pacific Russian ports, do not have such access to launching areas and the construction of totally new ports with comparable facilities is deemed uneconomic and politically unacceptable in the present situation.

If military-strategic calculations matter, the relative importance of Russia's SSBNs increases in terms of their protection, access to northern seas, and return to Kola Peninsula bases and facilities, which will have a role as the main focal point in the Arctic for military

planners both in Russia, the Nordic countries, NATO, and the United States. This implies that the strategic game in the Arctic continues. It is at least partly due to a lack of alternatives in Russia's geography, infrastructure, and resources (cf. Heininen et al. 1995, 53), but mainly to the high security-political value still attached to nuclear weapons, the military sector of security, and mutual deterrence thinking in security policies even in the middle of disarmament.

3.2 Nuclear Nonproliferation

The Nuclear Non-Proliferation Treaty (NPT) of 1970, banning the spread of nuclear weapons outside the five recognized nuclear powers, was extended indefinitely on 11 May 1995. In the Review and Extension Conference, three politically binding documents were adopted: "Strengthening the Review Process for the Treaty," "Principles and Objectives for Nuclear Non-Proliferation and Disarmament," and a resolution which calls for the early accession of all states to the NPT and for Middle Eastern states to establish a zone free of weapons of mass destruction. On 1 June 1995, only thirteen states were outside the NPT, three of them widely considered undeclared nuclear weapon states: India, Israel, and Pakistan. Review conferences of the treaty will be held every five years, the next one in 2000 (NPT/CONF.1995/L.4) (Military Balance 1995–1996, 277).

The result of the conference was not a unanimous breakthrough or a truly broad consensus. The extension decision was adopted without a vote, but it was not unconditional, and consensus on a final declaration was not reached (Epstein 1995). This failure was attributed to the still-existing groupings in nuclear disarmament issues, the Eastern, Western, and nonaligned blocks (Simpson 1995). A central factor in reaching the result was South Africa's unilateral decision to voluntarily drop its nuclear weapon program in 1989 and sign the NPT in 1991 as an expression of joining a modern nonproliferation policy like nuclear export controls by the Nuclear Suppliers' Group (NSG) and safeguards of the International Atomic Energy Agency (IAEA). In the NPT Extension Conference, South Africa actually proposed the concept which led to the consensus behind the extension.

Of the documents, "Principles and Objectives for Nuclear Non-Proliferation and Disarmament" is important in describing the basis for the future of the NPT, politically substituting the preamble part of the NPT drawn up in 1968 and a final declaration of the NPT Review and Extension Conference that was not negotiated (Kahiluoto 1995). The document stresses the universality of the NPT, its vital connection to furthering nuclear disarmament in concrete steps such as the Comprehensive Nuclear Test Ban Treaty (CTBT), and a convention banning globally the production of nuclear weapons and explosives and systematic efforts to reduce those weapons. The document reaffirms the establishment of regional nuclear-weapon-free zones, mentioning specifically the Middle East, and contains assurances for non-nuclear states joining the treaty of negative or positive guarantees against the use of nuclear weapons and underlines the role of IAEA safeguards. Particular importance is placed on ensuring research, production, and use of nuclear energy for peaceful purposes in conformity with the NPT (NPT/CONF.1995/L.5).

The role of the NPT in nonproliferation is threefold. The treaty can be seen as a legal barrier against proliferation, a norm for nonproliferation measures, and a confidence- and security-building measure enhancing nuclear transparency (Schinman 1995). Signs of a reshaping process can be seen in the future of nuclear nonproliferation. All three groups of states seemed to lose some of their cohesion during the conference, which can be partly interpreted as moving away from extended deterrence thinking, based on ideology, to a new kind of interest politics, a cooperative approach, and coalitions in future nuclear disarmament debates. It may sharpen the divide between nuclear states and others instead of the former division between nonaligned movement and others, or the North versus the South. This may open prospects for real multilateral nuclear disarmament where nuclear weapon states will find fewer sympathizers among non-nuclear weapon countries. Still, the nuclear disarmament agenda in the light of the NPT and its history may need reevaluation because of trends which point towards the "existential deterrence" where objectives like minimal deterrence for nuclear weapon states and bans on developing,

installing, and deploying "war-fighting" delivery systems like gravity bombs, nuclear artillery shells, and tactical missiles may be attainable (Simpson 1995).

The meaning of the NPT in the Arctic is contextual, since all eight Arctic states are parties to the treaty. The end of the cold war and developments within the NPT context give more possibilities to apply pressure for disarmament also for regional reasons.¹² The proliferation strategies of these states derive a big part of their credibility from their behaviour towards the nuclear states with an Arctic reach, Russia and the United States. Their commitment to continued nuclear disarmament in their bilateral relations and to joining multilateral efforts to counter all forms of proliferation (chemical and biological weapons, missiles capable of delivering weapons of mass destruction) either gives signals of the nonlegitimacy of nuclear weapons in international relations, or, at worst, enhances the temptation of third countries to believe in those weapons as tools in national security policies. Since the Arctic region is the most visible deployment area for weapons of mass destruction, the disarmament policies of Russia, the United States, and the NATO countries have also a symbolic importance which reaches far into the South and structures relations between North and South.

Documents related to the extension of the NPT Treaty continue to advocate nuclear weapon free zones, but it is not likely to bring new life to the cold war initiative of the Nordic Nuclear Weapon Free Zone. The idea was practically buried at the end of the cold war and, in effect, some of its purposes materialized when tactical nuclear weapons were withdrawn from ships in the adjacent sea areas and land-based tactical nuclear weapons were withdrawn from operational status. Future steps in the START process, if implemented, do not necessarily favour the zone idea since they reinforce the relative importance of the Russian Kola area in nuclear strategy. Revitalization of the idea is at present probably also prevented by Russia's reservations in its nuclear strategy, not only in that of the United States and NATO.

3.3 Test Ban

After France completed its controversial restricted series of six nuclear tests in January 1996, only China, which has been sceptical about unilateral moratoria, may continue tests until a Comprehensive Test Ban Treaty (CTBT) has been reached (PPNN 1995; cf. Gupta 1994). The United States carried out its last test in September 1992, and Russia has observed a moratorium since the former Soviet Union completed its test in October 1990. Negotiations for the comprehensive treaty started in January 1994 at the Conference on Disarmament (CD) in Geneva. With the declaration in the NPT Conference in May 1995, the nuclear powers have agreed to the test ban treaty during 1996. The background to this development is partly the end of the cold war and the lessening security role of nuclear weapons, but also the situation with resources and advances in simulation (Forss and Anttila 1995b).

The main problems in the negotiations have been related to the definition of a nuclear test and the problem of an effective global verification system. Much controversy has been related to the first problem concerning the scope of the test ban: would it be a "zero" solution including all, that is, also "peaceful" nuclear explosions, or having some reservations concerning special interests to conduct some "security tests" or explosions below a certain yield level (cf. Schaper 1994)? With the final rounds under way, the main parties are committed to a real zero solution.

Effective verification is seen to be needed, even if the Partial Test Ban Treaty (PTBT) has worked well without verification. Seismic control of the smallest explosions has its technical limits from a distance, making it difficult to identify nuclear among other explosions and earthquakes. So verification requires careful positioning of seismic control stations and different measures such as hydroacoustic, radio-nuclide, and infrasound monitoring, as well as on-site inspections and prior notification of major explosions (see, for example, Disarmament 1995). Discussions

have also been conducted about the role of the IAEA, if a separate CTBT organization is established. Another aspect is the linkage between international and national parts of a verification network (Arnett 1994).

The test ban treaty will be important, since, if effective, it will work as a disincentive for new nuclear programs. The treaty will contribute to nuclear nonproliferation and the whole process of nuclear disarmament.

The fate of a nuclear test ban is crucial for the Arctic region, since the only remaining Russian nuclear test sites are situated at Novaya Zemlya. In total, 132 explosions were conducted there, 43 of them underground, before tests were finished in 1990 (Nilsen and Bøhmer 1994, 122). Russia seems to have strong environmental and economic reasons to abstain from testing, which may improve the prospects of the CTBT.

4.0 CONVENTIONAL DISARMAMENT AND ARMS CONTROL

Starting with developments in northern Europe and adjoining sea areas (including Greenland), military structures still reflect continuity from the cold war time. The nuclear strategic constellation between Russia and the United States is still coupled with conventional forces and options for their use in future crisis scenarios. It is most visible in Russia's major conventional naval, air, and land forces surrounding or deployable in the Kola Peninsula area, and in the role which NATO's forces or reinforcements for the North have in controlling Russia's naval access to the North Atlantic. Tables of conventional forces of the Arctic states in their Arctic regions are presented in the annex .

Russia also shows military continuity by keeping the tasks, capacities, and deployments of its Leningrad Military District (also referred to as Northern Military District) by and large unchanged in their outlook on the strategic level, even if some changes have happened in connection with a restructuring of the organization (partly from division-regiment organization to army corps-brigade) and operational and

tactical level adjustments of weaponry. The situation in the Leningrad Military District reflects basic characteristics of the overall situation in the Russian military, including slow progress in reorganization, efforts to retain the technologically most advanced equipment, shortage of conscripts, lack of financial resources, restrictions on military exercise activities, and deteriorated social conditions of military personnel. But both in Russia and in the West, a consensus exists about the increased strategic significance of the Russian northwestern corner compared with its other European areas since the cold war, which does not imply, however, that the whole strategic framework has retained its previous political significance.¹³

Russian military capabilities in the North can also be interpreted as having decreased in some aspects, especially as changes in respective capabilities in the neighbourhood have been smaller, as in northern Finland and northern Scandinavia. The latter have not experienced radical cuts, deteriorated conditions of military personnel, lack of operating resources, or diminished legitimacy of armed forces with their effects on morale, education, and leadership.

But in Western military-strategic perceptions, Russia is still considered to have considerable offensive capabilities in the North. Threat evaluations refer to instability in the Russian political situation and unpredictability of events in some other regions, which may turn into the use of military power or pressure against Norwegian and NATO interests. Russia is still seen as capable of carrying out limited actions against Finnmark and, from the air or sea, against the whole of Norway, even if the political purpose of such action or any advantage from it may be incomprehensible. In the formulation of threat evaluations, an interesting development has emerged. Formerly, according to *The Military Balance in Northern Europe 1993–1994*, the North was claimed to be the only strategic direction where Russia could still launch a more comprehensive strategic attack. This claim has been omitted from the newest version of the study. Such an eventuality is said to need extensive and observable preparations, or it has become very unlikely because a "realistic" threat of surprise attack or major operations against the central

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region of NATO has faded. Also, there is no reference to NATO's pre-positioning of materiel or the importance of fast introduction of allied reinforcements to Norway as important deterrent factors (Military Balance in Northern Europe 1993–1994; Military Balance in Northern Europe 1994–1995).

In northern Europe outside Russia, only minor developments with military establishments have happened during the last three years. The military pattern of NATO and the United States in areas of northern Europe is unchanged along major lines. NATO has continued its restructuring of command and control arrangements. The new allied command structure became effective on 1 July 1994, when the responsibility for NATO's northern flank¹⁴ was transferred to the new Allied Forces northwest Europe, which incorporates operations in Scandinavia, the British Isles, Iceland, Svalbard, the Barents Sea, and maritime operations in the Baltic Sea. A new joint command, HQ North, was established in Jåtta, Norway. These arrangements may somewhat improve NATO's reinforcement capabilities in northern Europe. NATO's new force structure and defence decisions in Norway so far point only to minor changes in northern Norway's military establishment compared with those in southern parts of the country (Military Balance in Northern Europe 1994–1995).

The US forward-based Maritime Strategy from the Reagan–Lehman era has been modified into a From the Sea Strategy with more attention to doctrinal and organizational flexibility and joint operations. Also the US navy's operational capabilities will face a considerable quantitative decline during the coming years. Attack submarines, which have relevance both in conventional and nuclear postures, will probably be reduced by almost 50 percent by the year 2000 compared with 1988 (Jane's Defence Weekly 1995). But a lower quantitative capacity is not a setback if it is accompanied by better qualities,¹⁵ and the main targets for this kind of submarine force are Russian submarines. The US navy also estimates that Russia will have an advanced attack submarine fleet after 2000 (Defence News, Feb 6–12, 1995).¹⁶

Finland's and Sweden's military arrangements in their northern parts present no visible changes of

deployment and basic forms of action. Both countries stick to their military nonalliance, which underlines a relatively strong territorial defence. In Finland, especially, it is based on widely implemented conscription.

Threat evaluations in Russia, especially among those responsible for military planning, are important, although often forgotten when military developments in northern areas are discussed. Even without any knowledge of the contents of the safes of Russian military planners, it would not be a surprise from the viewpoint of military thinking¹⁷ if the northern fleet or Leningrad Military District as well as their higher authorities in Russia would still accept a "northwestern" scenario¹⁸ as a basis of their planning, and even assume that military capabilities are increasing in NATO. Combined with critical attitudes toward NATO enlargement,¹⁹ it tends to reinforce the traditional military pattern in the Russian northwestern corner, which is increasingly considered as a "front-line" (de Nevers 1994) (cf. Arbatov 1995; Zhurkin 1995).

The Treaty on Conventional Forces in Europe (CFE) was signed in November 1990 to reduce weapons holdings in Europe, especially in those categories essential for surprise and large-scale attack between the former cold war blocs, and so to consolidate military stability. The elimination of equipment was due to be completed by 17 November 1995. Even if this objective was almost reached in time, the flank issue in CFE is still open. Russia wants to keep more weaponry on its flank areas, that is, in the Leningrad Military District and North Caucasus, which represent about a half of European Russia west of the Urals.²⁰ The need is argued first of all by the instability in the Caucasus, but basically the flank problem was already present during initial negotiations in 1989–1990 (Sharp 1994), even if it surfaced in the new context during 1993 as an expression of the treaty's outdated background in the cold war situation.

The first review conference of the treaty will take place in May 1996, a probable deadline for a solution, where a "redrawing" of maps seems to be an essential element, according to the Joint Consultative Group statement of 17 November 1995. In practice, it would mean that Russia could deploy more equipment

around the St. Petersburg area than it would have been able to do with the original flank definition, but probably such a solution would be backed by additional confidence- and security-building measures (Ruotuväki 10.1.1996). Norway and Finland (which is not a party to the CFE) have separately underlined the importance of the treaty. Finland finds it important that the number of weapons and forces does not increase beyond its borders, and the CFE is understood to create prerequisites for a further strengthening of stability. Finland has also been engaged in dialogue with Russia concerning forces over the border (Security in a Changing World 1995, 43–44). Any major changes applied specially to the Arctic areas are probably not to be expected, if the solution to the flank problem will be according to the lines indicated.

Military developments in northern Europe also show traits of the more international cooperative security thinking and all-European security integration where issues of multilateral conflict management are present also in military actions. These include issues related to the North Atlantic Cooperation Council (NACC) or Partnership for Peace (PfP) cooperation, or Confidence and Security Building Measures (CSBM) within the OSCE framework. In the northern European Arctic, practical expressions are naval exercises within the PfP framework starting from 1994.²¹

Another important aspect of new developments is increasing military cooperation on a bilateral or inter-Nordic basis over former cold war borders. The latter agenda includes enhanced cooperation in defence materiel, readiness in peacekeeping and crisis management, several forms of military contact, and other cooperation, which already has a long history in spite of different defence policy orientations. On this level there are evidently a lot of unused regional opportunities concerning contacts between Russia and Nordic countries bilaterally or multilaterally. A new kind of cooperation, especially in "softer" aspects of military activities, could transcend excess secrecy and create new dialogue, for instance, between military commanders in the North and between civilian and military authorities, even if the "hard" arms control in the region may still have prominent obstacles (cf. Miller 1992).

New problems in the Arctic are often less military, but may have military implications. They are connected to disputes about utilizing natural resources such as fishing grounds,²² environmental effects of military activities (discussed here later), sea rescue and catastrophe prevention activities, common control of borders, and relations between military establishments and local communities in civil and other social affairs. A perception that employees and conscripts in military organizations in the Far North do not belong to the circumpolar community and civil–military relations on regional and local levels would be irrelevant, for security can be challenged (cf. Griffiths 1992, 296–305). Rather, the high level of militarization in terms of the relatively large number of military, frontier guard, customs, police, and other state security workers, their families, and relations with their neighbours is a key local and regional social and economic issue to be considered not only in Russia but in the Nordic countries and North America, since it has a specific Arctic input in future security.

In the North American Arctic areas, the US land forces in Alaska are about the same as in 1991, and US air forces have actually increased their combat aircraft capacity.²³ Canada has reduced its total military personnel by almost 20 percent and respectively increased reserves. It has decommissioned about 30 percent of its combat aircraft and almost 40 percent of its principal surface combat ships, but retained main battle tanks and submarines and even somewhat increased artillery and especially armoured personnel carriers. No special restructuring or increase of activities in northernmost parts of the country has happened, excluding new early warning stations and NATO air force exercises. Canada withdrew militarily from Europe in 1994, excluding peacekeeping operations and a small amount of pre-positioned equipment in Norway (Defence and Foreign Affairs Handbook 1994; Military Balance 1991–1992; Military Balance 1995–1996).

5.0 ENVIRONMENTAL EFFECTS OF MILITARY ACTIVITIES AND DISARMAMENT

One of the central aspects of the cold war legacy which directly involves the Arctic region and relates

to its comprehensive security is certainly environmental problems caused by military establishments and activities, be they derived from either nuclear or conventional capabilities. Naturally, emerging hazards of nuclear/radioactive waste have been at the forefront of international action, especially those unfolding in northwestern Russia. But there are other, perhaps less visible, problems which relate to the generally large military presence in the vulnerable Arctic environment, also in terms of ecologically damaging conventional exercises which affect the lives of Indigenous and other local peoples. These are military construction and non-nuclear wastes.

In this paper, the focus is only on military activities, even if the problem of ecological security from a viewpoint of states and local political communities is a totality. But military activities are responsible for most nuclear waste problems, and solutions to them, at least in some respects, touch national security policies, through which states have special opportunities to affect military organizations in their future activities, if they wish to do so.

First, Russian nuclear military wastes. The Russian northern fleet is the largest consumer of nuclear energy in the region with 82 nuclear-powered submarines and 2 surface-ships with a total of 158 nuclear reactors (Military Balance in Northern Europe 1994–1995, 30–31). The Russian navy produces annually about 20 000 m³ of liquid and 6000 m³ of solid waste, most of it in the northern fleet bases and Severodvinsk. In the future, Russia, if it follows the ten-year program from 1993, will have a fleet with some 60 nuclear-powered submarines compared with 128 in 1995. Most of them will probably be based in the Arctic.

In the coming years, some 180 nuclear submarines will have to be disposed of. Over 70 nuclear submarines with about 160 reactors are waiting for dismantlement at different bases in the Kola/Archangel areas. Since the late 1980s, the Soviet Union/Russia has retired about 20 nuclear submarines a year (Forss 1994). Other radioactive sources²⁴ in the regions of Murmansk and Archangel include 5000 m³ of liquid radioactive waste, nearly 7000 m³ of solid radioactive waste, over 54 000 used fuel assemblies,²⁵

9 civilian nuclear-powered ships, storage facilities, 400–600 containers with radioactive minerals, and 132 radionuclear thermoelectrical generators in lighthouses. The Kara Sea as a dumping site holds 16 nuclear reactors with or without fuel, a minimum of 16 ships containing radioactive waste and over 6500 containers of it, and about 140 other radioactive items. The Barents Sea has received at least 192 700 m³ of liquid radioactive waste during the Soviet period from 1960 (Nilsen and Bøhmer 1994, 12–15).

Solid and liquid nuclear waste creates an acute storage problem now that dumping at sea is prohibited. Present storage capacity is too small. Used fuel assemblies, which Russia considers as raw material, not waste, are stored in various naval bases in land-based storage tanks or on board barges and service ships on the Kola Peninsula and Severodvinsk, most of them at the Zapadnaya Litsa facilities²⁶ before they are transported to the Mayak reprocessing plant in the Urals, whose capacity seems to be sufficient. In 1993, an estimated 800–1600 assemblies were transported to Mayak (Forss 1994). Submarines taken out of operation are anchored in at least five different places. Until 1988 their reactors were dumped in the Kara Sea. Today, the decommissioning of nuclear submarines from Russian fleets other than the northern fleet takes place in Severodvinsk, where, for example, approximately 150 submarines will be destroyed under START II.²⁷ Altogether this means nearly 280 waste reactors. Decommissioning of Russian submarines altogether was estimated in July 1993 to cost at least 23 billion rubles. After 150 submarines have been broken up, approximately 80 more from the northern fleet will be taken out of operation between 2010 and 2030 because of their age (Nilsen and Bøhmer 1994, 48–52). The process of breaking up a submarine hull might not begin until two to ten years after decommissioning (Forss 1994).

A much-publicized single accident concerning nuclear submarines happened in the Norwegian Sea 180 kilometres southwest of Bear Island on 7 April 1989 when the *Komsomolets* (Nike-class) sank after a fire broke out and forty-two people died. On board the wreck at a depth of 1685 metres there is one nuclear reactor and two warheads.²⁸ The submarine is

not considered to constitute a serious threat to people or the environment (NATO 1995, 8). After that, at least fourteen smaller accidents involving nuclear submarines have happened.²⁹ Accidents with warheads have been mostly connected with handling of missiles aboard submarines (Nilsen and Bøhmer 1994, 58–73).

Several international agencies and forms of cooperation deal with the Russian nuclear waste problem on either a multilateral or a bilateral basis. One example of the first is the NACC Committee on the Challenges of Modern Society, which conducts pilot studies on different subjects, one of them being "Cross-border Environmental Problems Emanating from Defence-related Installation and Activities." In the final report of the first phase, published in April 1995 (NATO 1995), the main conclusions concerning the subtopic of radioactive contamination describe the present level of radioactive contamination as "relatively low," but predict risks of significant future contamination. The most urgent needs are safe management and storage of spent fuel and radioactive waste and developing environmentally safe methods of decommissioning submarines. The report considers international cooperation important, even if construction and costs of a storage facility are seen as a national responsibility. Recommended actions include development procedures and plans, evaluation of environmental impact, building of facilities, further investigation of radioactivity releases into the Kara Sea through rivers, and special emphasis on the training of personnel responsible for planning and operating military-related nuclear facilities (NATO 1995, i,–ii, 23–24).

Other actors in nuclear safety include the European Union, the Barents Council's environmental task force, the Norwegian–Russian Commission of the IAEA, and several bilateral arrangements.

The nuclear waste problem in the North is mostly seen as an internal policy matter for Russia, who since 1992 has had a program to deal with it. Proposed measures usually include a large array of infrastructure development. Russia has worked to get monitoring of both the military and civilian nuclear waste problem under single control. President

Yeltsin's decree of 1991 originally gave the job to the Russian Federal Inspectorate for Nuclear and Radiation Safety (Gos-Atom-Nadzor). The agency did a lot of preparatory work, but was later exempted from military-related safety matters, according to Yuri Vishnevsky, Chairman of Gos-Atom-Nadzor, because of the military's interests. According to him, a program to establish a regional storage site in the Arctic is being examined by a government board. The program should be accomplished by 2005 and demand about 5 trillion rubles by 1995 prices (Danilyuk 1995). Russia has drawn up plans to use a site in the southern part of Novaya Zemlya for low- and medium-level solid waste (Forss 1994).

Also, the European Parliament addressed the nuclear submarine problem in November 1995, when it demanded that naval states notify the United Nations about sunken nuclear weapons and reactors and that they start negotiations about the danger posed by them; it also called for more EU assistance for Russia and cooperation with it.

At the Barents Council's environment ministerial meeting in December 1995, a plan from the Nordic Environment Finance Corporation (NEFCO) and the AMAP Expert Group was presented to address Kola waste problems. The plan would include five projects for the handling and transport of radioactive waste and spent fuel, regional storage of wastes, development of techniques for decommissioning submarines, nuclear safety at the Kola power plant, risk and impact assessments, and monitoring systems. The total cost was estimated as nearly US\$48 million from non-Russian sources (NEFCO 1995). One recent evaluation of costs concerning scrapping of decommissioned submarines so far is around US\$2 billion (Laaksonen 16.1.1996). Several countries have also done a lot of bilateral cooperation with Russia concerning nuclear safety both in the Arctic region and other parts of the Russian northwest.³⁰

The prospects for environmental problems are directly connected with the fate of disarmament and nuclear testing, but more states are interested in cooperating with Russia in the tasks of dismantling its nuclear navy, building new storage facilities, improving other

infrastructure, transportation of fuel, and safety of the Kola nuclear power plant. In spite of the general importance of the problem of nuclear military wastes, as a current visible security problem it can also be easily exaggerated compared with the overall continuation of qualitative development of armed forces and their deployment in the Arctic region when they do not necessarily match the actual needs of comprehensive security. It is worth remembering that, in general, nuclear submarines must have been built according to high safety standards. The risks of military nuclear activities relate to lack of funds for scrapping submarines, old and inadequate storage facilities, transportation of fuel, and burglary and theft³¹ (Potter 1995). Risks from nuclear power plants in the area can be evaluated as greater, since they affect populations in neighbouring states, unlike risks from naval nuclear waste. But the latter is still a health risk to people involved or otherwise in close contact (Forss 1994).

The United States also has waste problems related to nuclear arsenals and disarmament. It does not reach the Arctic environment in the same way as in Russia, since bases of the nuclear fleet are situated outside the region. But the United States also has to get rid of a big part of its weapons and bear the burden of costs, which rise to about US\$25 million for disposing of one nuclear submarine.³² The government has allocated some US\$2.8 billion for the purpose over a ten-year period. American methods of breaking up submarine hulls are quite similar to Russia's (Forss 1994).

Other environmental problems related to the military in the Arctic include NATO low-level flight training consisting of thousands of flights at a height of 30–100 feet (9–30 metres) near Goose Bay, Labrador, in Canada, construction of radar stations in the middle of reindeer herding areas, pollution and other environmental effects caused by military infrastructure such as early warning stations and artillery, missile and aircraft shooting ranges, explosion areas, as well as army field exercises in the vulnerable Arctic terrain. Arguments about the scope of effects and damage differ (see, for example, Heininen et al. 1995, 87–93). Also, attitudes among armed forces towards environmental protection differ.

But clearly there is an Arctic-specific security issue to deal with.

6.0 DISCUSSION

Both nuclear and conventional disarmament have taken several steps forward since the end of the cold war. Eliminating arsenals and reinforcing the institutional and financial conditions for disarmament have undergone a rather steady, even if sometimes slow, progress. It is important to note that no major setbacks have been experienced even if Russia has changed its foreign policy course towards a bit less pro-Western orientation, and the United States has also reevaluated its role in post-cold war world politics. Developments and prospects for nuclear nonproliferation, as well as efforts to reach a complete test ban, point to a lesser reliance on nuclear weapons in security policies. Abolishing former expressions of military rivalry can be described mainly as a success. The only major controversy in the field of arms control and disarmament generally is the unresolved CFE flank issue, which is a problem that was created in the cold war setting.

But several factors are reminders of the transitional nature of European and global security arrangements. Many of these can be noticed in the Arctic region in the military sector of security. The fact that the system of deterrence still exists alongside increasing cooperation in nuclear disarmament is present there. The Arctic does not seem to have turned out to be the first evidence of a totally changed military order in the world. The relatively increasing strategic importance of the northern European Arctic and adjoining sea areas does not match the more general scheme, where national military forces have a widening role in international peacekeeping and conflict management instead of traditional national defence and deterrence.

In the Arctic region there are no such seeds of conflict, which could in the longer run make the present military configuration understandable from the viewpoint of increasing cooperation among states and between them and other actors. The total military outlook does not fit into any other imaginable conflict, but between Russia and the rest of the Northern Hemisphere, a new cold war setting. In an integrated

framework, the problem at this stage is that military structures are oversized and resemble too much those of the past to be adapted to the demands of comprehensive security. As such, they constrain stability to a militarily loaded notion in a state's policies more than elsewhere. This situation sustains threat images according to traditional views about security in order to address fears in the middle of a complex situation, especially in the area of the former Soviet Union. The Arctic region with its relatively strong military presence and familiar forms of strategic action, but at the same time with limits of transparency, presents an example of order and stability. It is a repository of traditional security instruments available for narrower perceptions of security policies.

But there are also signs of a different relationship between politico-military and other aspects of security. Mostly these are connected with practical and transparent linkages between sectors and are border-crossing also in the military sense. Wide and multiple cooperation to help Russia manage its nuclear and other military-produced waste is a case in point, since it tests linkages between closed military establishments and others, both horizontally and vertically. Another relates to increasing military cooperation, which does not mean operational planning against a prescribed enemy, or trying to go straight to difficult problems of traditional arms control. Future implications of all these activities are important to follow, since the attention given to them points also to continuing disarmament and a trend where military arrangements are more in line with a more political evaluation of the conflict situation in the Arctic.

The borderline between Russia and its close western neighbours in the Arctic is an interface, where choices of states' foreign and security policies between a wider security integration in the OSCE–Europe or more inward-oriented "self-fortification" will acquire visible expressions in military arrangements in the future. It is also a geographical frontier where a trade-off between the Western security community's cohesion and enlargement depends very much on a small group of states, all of them Arctic states. Opportunities to adapt the military sector to an integrated framework in the Arctic presupposes a

growing attention to common regional security problems, especially new ones like those relating to increasing mobility across borders, management of natural resources, rights of Indigenous peoples, and social and economic security of people who have lost their jobs because of structural change in local economies. These problems have not much to do with military security, but often with the military establishment and local and regional civilian and military relations.

According to the present situation regarding military factors in the Arctic, there are probably not available many regional solutions in traditional security in a short time period, but there may be small steps, especially in subregional contexts like the European Arctic. Even if disarmament and arms control still progress, much in Russo–American bilateral terms and obstacles still lie, for example, in the emphasis on nuclear weapons, or in principles like freedom of the seas for military vessels, or the need to have watertight detailed verification; states are necessarily more challenged than before to conduct a special Arctic or "Northern" policy. In it, nonmilitary security questions will increasingly be presented, which cannot be answered without challenging the assumptions behind traditional security.

States in the Arctic probably have a choice of two basic lines for military instruments in their Arctic policies. They can (1) continue by and large as before, or (2) engage in a controlled cutback and transformation of the military sector also for regional reasons in order to mould it better to other sectors and also agents of security in the region.

The first line emphasizes military stability as a way to produce the basic order and separation of comprehensive and political-military security aspects. Apparently, it also ignores a special problem that exists in the present situation with military security, when threats are interpreted as having been reduced in intensity. Its structures and patterns are only incrementally moulded to include such new activities as peacekeeping, rescue readiness, and other "soft" forms of military cooperation. It is clear that no major multilateral steps in regional disarmament are to be expected, but some unilateral steps may continue.

The second line would imply new multilateral interests where evaluations behind the continuity of military patterns are brought more into the daylight on the regional level. Naval arms control and some confidence- and security-building measures in the Arctic have lost political favour with the end of the cold war, even though several proposals were presented in the 1980s (Möttölä and Joenniemi 1988). This fact has left the Northern military order rather independent. Military confrontation between Russia and others is still visible, but in a totally changed political setting there might be room for new measures as a part of the new openness. The main idea might be capabilities and forms of action which represent a shift from the defence and interstate war configuration of armed forces and their actions to a pattern which will better match the actual cooperation in the Arctic region and its achievements and the needs rising from the new regional interdependence.

NOTES

1. Eriksson (1995) uses a distinction of "traditionalist" and "revisionist" theoretical positions to security, the latter usually having a "broad view of the security agenda." Also the term "extended" has been used instead of "broad"; see, for example, Möttölä (1996) in part I of this background paper.

2. The INF (Intermediate Range Nuclear Forces) Treaty was signed in December 1987. The Soviet Union and the United States agreed to abolish all ground-launched cruise and ballistic missiles with a range between 500 and 5500 km, their launchers, and bases. This work was completed by 1 June 1991.

3. The START (Strategic Arms Reduction Talks) negotiations started in 1982 as a continuation of SALT (Strategic Arms Limitation Talks) of the 1970s. The START I Treaty was reached already in summer 1991, but several phases due to the break-up of the Soviet Union slowed its entering into force. Kazakhstan ratified the treaty 2 July 1992, the United States 1 October 1992, Russia 4 November 1992, Belarus 4 February 1993, and Ukraine 18 November 1993. But since the treaty was tied also to Kazakhstan's, Belarus's, and Ukraine's joining into the NPT (Non-Proliferation Treaty), it could not enter into force before that happened, Ukraine being the last to join 5 December 1994.

4. Counting rules for strategic warheads differ in START I and II. The number of "operational" warheads is also different from "accountable." Figures for total accountable warheads are somewhat higher than presented here. In the United States, intercontinental ballistic missiles (ICBMs) are situated at twenty sites in seventeen states, none of them in Alaska.

5. As of 1 June 1995.

6. The START II Treaty was based on the joint understanding reached by presidents Bush and Yeltsin 17 June 1992 and signed by them 3 January 1993. The treaty is tied to the ratification of START I. Also it will stay in force during the same period as

START I, which is initially until 5 December 2009, but it can be continued for five-year intervals.

7. Post START II nuclear posture is evaluated to include for the United States: 450/500 Minuteman III ICBMs with 1 warhead each, 336 SLBMs with 5 warheads each, 64 B-52 H bombers with 20 or 12 ALCMs, and 20 B-2 bombers, which can carry 16 bombs each (Forss 1995). Russia might have 605 road-mobile SS-25 ICBMs, 90 SS-25 ICBMs in SS-18 silos, and 105 SS-19 ICBMs, all with 1 warhead each. Additionally Russia would have 176 SS-N-18, 120 SS-N-20 (each with 6 warheads), and 112 SS-N-23 SLBMs, and 50 Tu-95 (bear H) bombers (with 16 or 6 ALCMs each) and 25 Tu-160 Blackjack-bombers (Goodby et al. 1995).

8. Estimates of the number of tactical warheads differ very much. The Bulletin of Atomic Scientists (1995b) gives a number of 1150 for US operational "non-strategic" warheads, 800 of them being bombs and 350 SLCMs. Albright et al. (1995) estimates "several hundred" tactical warheads for the United States, and Forss (1995) estimates 950. According to him, the United States will retain the ability of attack submarines to carry Tomahawk SLCMs and at least the total amount of its tactical nuclear weapons until 2005.

9. According to some estimates, several thousand warheads of aged tactical weapons are still in at least 100 different storage sites in Russia. Albright et al. (1995) evaluates the number at 2000–6000.

10. In his presidential directive, President Clinton changed the policy of MAD (Mutual Assured Destruction) into MAS (Mutual Assured Survival) (Forss and Anttila 1995a).

11. The North Warning System (NWS) has replaced the aged Distant Early Warning line (DEW) and is technically more advanced for the strategic environment of advanced bombers and cruise missiles. It consists, on Canadian soil, of eleven long-range (200 km) and thirty-six short-range (110–150 km) radar stations. The Thule air base in Greenland has one of three Ballistic Missile Early Warning Stations (BMEWS) and a Spacetrack radar station; the other BMEWS station in the Northern area is in Clear, Alaska. Air bases in Greenland and Keflavik, Iceland, are capable of receiving and offering assistance for aircraft of the United States and NATO on strategic missions. In 1994, Canada and the United States agreed to discontinue cruise missile testing in Canadian airspace.

12. Simpson (1995) refers to the Group of 10 (G10) in the NPT context, which actually includes five of the eight Arctic states: Canada, Denmark, Finland, Norway, and Sweden.

13. More about strategic factors of continuity and change from the viewpoint of Nordic security in Nökkala (1994).

14. Note the continuing expression of this NATO's area of responsibility as a "flank," referring to the collective defence against the East (Military Balance in Northern Europe 1994–1995).

15. While decommissioning dozens of older submarines, the US navy is fighting for the production of a third new Seawolf-class attack submarine (first of the class will be commissioned 1996) and for the New Attack Submarine program after that. The navy wants ten to twelve Seawolves available by 2010. All the new attack submarines will have stealth capability (Defence News, March 6–12, 1995).

16. According to the US navy intelligence report in January 1995, "Worldwide Submarine Proliferation in the Coming

Decade," Russia is working to have a new submarine-class by 2000 which is expected to rival the capabilities of new US attack subs. The percentage of "third-generation" submarines in the Russian navy will rise to 51 percent of the fleet by the year 2000 from 28 percent today (Defence News, Feb 6–12, 1995). The argument is certainly used to bolster needs for qualitative improvements in this area of military technology, but even as such illustrates that confrontation with an Arctic reach is not over between the United States and Russia, since no country in the world has comparable submarine forces.

17. Here meaning principles based on organizational norms as well as strategic and operational implications of the interplay between technology, geography, and human factors in a conflict scenario.

18. See Lindberg 1994, pp. 96–100. Lindberg describes especially Finland's cold war threat evaluations, but his "northwestern" threat evaluation is based on a more general viewpoint of a military threat against Russia's submarine bastion posed by the United States.

19. Hard-line suspicions about Western aims, which see the US policy and NATO enlargement issue as part of a strategy to drain Russia of resources, isolate it, and force it out of Europe, also seem to include an idea of restraining NATO by military forces, even by nuclear weapons, also in the North. An illustrating example of this line of argument is in CSRC (1995).

20. President Yeltsin's letter to Western leaders 17 September 1993 underlined the problem that according to the CFE Treaty, Russia was allowed to have in this vast area (in active forces) only 700 main battle tanks of 6400 entitled to Russia altogether, 580 armed combat vehicles of 11 480, and 1280 artillery pieces of 6415.

21. The first one having a connection to the North was Co-operative Venture 94, Sept. 28–Oct. 7. Fourteen countries participated with their naval units (SIPRI Yearbook 1995, 78, 279).

22. Disputes between Iceland and the United Kingdom, Iceland and Norway (like 1994), Canada and the European Union (in spring 1995), and the attention different military organizations up in the North devote to control of fishery are cases in point.

23. In 1995, the United States had one light infantry brigade (earlier division, but with the same personnel strength) and one air force headquarters and five squadrons, together with seventy-eight combat aircraft in Alaska compared with fifty-six in 1991 (Military Balance 1991–1992; Military Balance 1995–1996).

24. These include sources with a civilian origin like nuclear-powered icebreakers and commercial ships as well as the Polyarnyy Zori nuclear power plant.

25. Including those from civilian nuclear ships. According to Forss (1994), Soviet/Russian naval vessels have to date generated about 50 000 spent fuel assemblies, which are highly radioactive. On the other hand, the whole amount of spent fuel weighs about 100 tons for all submarine reactors which have to be scrapped. By comparison, two Finnish nuclear power stations produce 30 tons of spent fuel *annually*.

26. At the beginning of 1993 there were a minimum of 21 000 fuel assemblies (Nilsen and Bøhmer 1994, 46).

27. Also submarines from the Pacific fleet will be brought here according to Russian governmental decisions in 1992. This seems unlikely though (Forss 1994).

28. The *Komsomolets* is not supposed to cause ecological threat according to *Komsomolets* Fund communiqué 1 August 1995 (see OMRI 1995).

29. In one of them, 20 March 1993, a US submarine was also involved when it collided with a Russian Delta-class submarine off the coast of the Kola Peninsula. The damage was luckily minor.

30. For instance, Finland as a close neighbour of Russia has focused on improving the safety of nearby Russian nuclear power plants in Kola and Sosnovy Bor. In 1992–1994, Finland allocated about US\$5.2 million for bilateral cooperation in nuclear safety (Ministry of Trade and Industry 1994). Norway has also been active in the Kola waste problem, which is expected to get worse. A lack of liability contracts has been slowing safety agreements (Nucleonics Week, Oct. 12, 1995). Norway has recently been planning to aid the safety of the Kola plant with NKr 20 million. A total amount evaluated to be needed to get the plant to an "acceptable level" according to some Western specialists is between NKr 500 and 600 million (Aftenposten 13 November 1995).

31. Cases in the Arctic region include a theft of 1.8 kilograms of highly enriched uranium (HEU) from Andreeva Guba naval base in late July 1993 and 4.5 kilograms on 27 November 1993 from Sevmorput near Murmansk. Violators were seized in both cases, which were proliferation-significant because of the quantity of HEU (Potter 1995).

32. The average reactor compartment disposal cost is US\$7.5 million. The annual cost for disposal of low-level radioactive waste is about US\$100 million in the next twenty years (Forss 1994).

Annex

Conventional Forces of the Arctic States and in the Arctic Region

Table 1. Conventional forces of Arctic states.

Country	Manpower (active) ¹	Manpower (reserves) ¹	Defence expenditure (million \$) ²	Defence expenditure (% of GDP 1994)	Main battle tanks	Armed personnel carriers and combat vehicles	Combat aircraft	Submarines	Principal surface combatants	Patrol and coastal combatants
Canada	70 000	57 000	9 242	1.7	114	1858	228	3	16	12
Denmark	33 000	72 000	2 667	1.9	411	329	66	5	3	39
Finland	31 000	700 000	1 919	2.0	232	900	108	—	—	21
Norway	30 000	255 000	3 333	3.1	170	223	80	12	4	30
Russia	1 520 000	20 000 000	106 927	9.3	19 000	33 000	4 066	138 ³	150	143
Sweden	64 000	730 000	4 818	2.5	288	795	393	13	—	41
United States	1 547 000	2 045 000	278 730	4.3	12 667	13 119	5 825	82	137	158

¹Total armed forces.

²1993 constant prices.

³Strategic submarines are considered only nuclear and as such are excluded from this number.

Table 2. Conventional forces in the Arctic region.¹

Country	Forces	Remarks
Canada	<ul style="list-style-type: none"> • <20 North Warning System early warning radar sites 	—
Denmark (Greenland)	<ul style="list-style-type: none"> • air base (Thule) • Ballistic Missile Early Warning System station at Thule • SPACETRACK station at Thule 	US forces. Early warning stations relate to strategic defences.
Finland	<ul style="list-style-type: none"> • Jaeger Brigade, Sodankylä • Lapland Wing, Rovaniemi (20 fighters) • Lapland Frontier Guard 	Peacetime forces.
Iceland	<ul style="list-style-type: none"> • Keflavik air base (4 fighters, tanker aircraft, 8 maritime surveillance aircraft, helicopters, personnel strength about 3000) 	US forces.
Norway	<ul style="list-style-type: none"> • 6 divisions (4 brigades) • Border guard company • Mobilization forces in Troms: 1 brigade; in Finnmark: 4 battalions • 5 air stations; 32 fighters, 6 maritime surveillance aircraft, transporters, helicopters • Coastal artillery, torpedo batteries, and mine stations • Submarines, missile-torpedo boats, at least 1 frigate 	<p>NATO reinforcement plans under revision. Former reinforcements relevant for deployment to Norway:</p> <ul style="list-style-type: none"> • 1 US Marine Corps Expeditionary Force (55 000 personnel); part of being a marine expeditionary brigade (total 13 000 personnel, about 80 aircraft) • British/Netherlands Amphibious force • NATO's Composite Force • Allied air forces, about 200–300 combat aircraft • ACE Mobile Force (AMF) • Naval forces according to situation
Russia	<ul style="list-style-type: none"> • 2 motorized rifle divisions, 2 naval infantry brigades, 1 coastal defence brigade (Arkhangelsk), border guard troops, <1 Spetsnaz brigade • 1030 main battle tanks, 1264 artillery pieces, and 1600 armoured combat vehicles in active units² • About 450 aircraft and helicopters of the northern fleet • Part of the helicopters of the tactical air forces in the Leningrad Military District • About 100 air defence fighters on the Kola Peninsula • Northern fleet: 32 tactical submarines, 49 major and 43 minor surface combatants; <14 naval bases 	<p>According to the CFE Treaty and an agreement reached among CIS states, Russia is allowed to keep in the Leningrad and North Caucasus Military Districts altogether 1300 tanks, 1680 artillery pieces, and 1380 armoured combat vehicles. Of these, Russia is allowed to store 600 tanks, 400 artillery pieces, and 800 armoured combat vehicles in the southern part of the Leningrad Military District.</p>
Sweden	<ul style="list-style-type: none"> • Parts of the Northern Command • Norrland-brigades (total in Sweden 5) • Territorial defence and Home Guard units 	—
United States	<ul style="list-style-type: none"> • 1 light infantry brigade • 5 squadrons of air force (72 fighters, 6 attack aircraft) • North Warning System early warning radar sites • Ballistic Missile Early Warning System station at Clear • SPACETRACK station at Clear 	Early warning stations relate to strategic defences.

References: The Military Balance 1995–1996; The Military Balance in Northern Europe 1994–1995.

¹ The Arctic region here consists of Alaska and Canada, both above 60° latitude, the whole of Greenland and Iceland, but only those parts of Scandinavia, Finland, and Russia that are above the Polar Circle. Only the most important forces (including dual-capable) are included in this table.

² Leningrad Military District and northern fleet combined (about 200 tanks, 400 artillery pieces, and 400 ACVs in Arctic areas).

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conference in Reykjavík in 1993: "It is disturbing that one of the greatest concentrations of nuclear weapons, nuclear power installations, and atomic-powered vessels in the world is still located in the Kola area."

As a concerned neighbour, Norway has prepared a plan of action to deal with nuclear activities and chemical weapons in areas adjacent to our northern borders. In 1995 and this year, a total of Nkr 260 million has been allocated for different projects under the plan of action. This includes measures addressing safety standards at nuclear installations, management and storage of spent uranium fuel and radioactive waste, the dumping of radioactive waste in the sea, as well as arms-related environmental hazards.

Presentations

Collective Environmental Security

Jan P. Syse
President of the Lagting
(Norway)

The end of the cold war has forced us to review and expand the concept of security. Human activity is the most important source of pollution, and natural resources are to a large extent overexploited. Prevention of environmental degradation is, therefore, first and foremost a question of regulating and controlling human behaviour.

Environmental degradation does not honour boundaries, and transnational environmental problems can be solved only through international agreements. The notion of collective environmental security must, therefore, refer to both global and regional efforts to prevent environmental degradation.

I would like to turn to some of the risks with direct relevance to the Arctic. The Kola Peninsula is the site of one of the largest concentrations of civil and military nuclear activities in the world. An important objective of the Nordic countries' foreign policy is to prevent any adverse effects due to nuclear activities and installations. This requires comprehensive international cooperation on technical and financial aspects of measures addressing the problems. Allow me to repeat what I said at our first parliamentary

Of the numerous projects having received support so far, some deserve to be mentioned. A considerable amount of money has been allocated for improving safety standards at the nuclear power plant on the Kola Peninsula. During 1992–1994, three joint Norwegian–Russian expeditions to the Kara Sea were carried out to investigate radioactive contamination in the sea due to dumping of radioactive waste. Norway and the United States have contributed to the expansion of the low-level liquid radioactive waste processing facility in Murmansk, and hope that this may facilitate Russian accession to the ban on the dumping of radioactive waste at sea (the London Convention of 1972).

Norway puts great emphasis on bilateral cooperation with the Russian Federation, and in October 1995, the foreign ministers of the two countries signed a memorandum concerning cooperation on nuclear safety.

I would now like to turn to the problem of developing energy resources in the area of the Arctic. There has been much concern with the potential effects of oil pollution from exploration and planned oil production. In the Norwegian sector of the Barents Sea, a total of thirty-five production licences have been awarded since 1980. In Canada, Russia, and the United States, oil production has already taken place for some time, and it has been possible for the Norwegian authorities to draw on their experience.

The management of living marine resources in the Arctic region is of utmost importance to the whole

world. Our countries, some more than others, are dependent on living marine resources, and it is, therefore, of vital importance to ensure sustainable use of the rich resources of the Arctic seas.

The management regime for living marine resources in the Barents Sea was developed by Norway and Russia within the framework of the Norwegian-Russian Fisheries Commission. I particularly want to emphasize the fact that management decisions are taken on the basis of scientific advice from the International Council for the Exploration of the Seas (ICES). It should also be noted with interest that we have a cooperation between Norway, Greenland, Iceland, the Faeroe Islands, and the EU on the management of living marine resources in the Arctic region.

Let me end this part of my presentation by remarking briefly on the possible consequences of climate change. According to the Arctic Monitoring and Assessment Program under the Arctic Environmental Protection Strategy, the effects of global warming are expected to be more dramatic in the Arctic than in lower latitudes and may have significant impacts on sea life, river runoff, and permafrost.

The environment is the sector covered by the greatest number of international agreements. Important environmental projects are being implemented under the Barents Council, as well as within bilateral/trilateral or Nordic cooperation and even within the North Atlantic Co-operation Council (NACC).

Beginning with the last one, you will recall that the NACC focuses on regular consultations and civilian aspects of the reform process in central and eastern Europe, including the conversion of arms industries. Of particular value to us is the NACC's potential as a forum for the management of environmental problems related to military activity. We should all take an active part in the efforts to tackle these problems.

Norway is chairing a NATO/NACC pilot study on crossborder environmental problems emanating from defence-related installations and activities. Phase one of this study, which encompasses twenty-three countries, has resulted in comprehensive reports on

radioactive and chemical pollution. The second phase of this study, which includes the environmental risks related to the decommissioning of nuclear submarines, has now been started.

The Barents Euro-Arctic region is a rather unique example of cooperation between western and eastern Europe. We should look to its successes in Arctic cooperation. The region comprises the northern counties of Norway, Sweden, and Finland, and not least, the oblasts of Murmansk and Archangel and the republic of Karelia in Russia. As an arena for contact between individuals, organizations, and local government in northwestern Russia and the northern part of the Nordic countries, the Barents cooperation has already made an impact on the lives of ordinary people in the region.

The unique character of the Barents cooperation is visible in the very way it is organized. Much of the initiative and the momentum is in the hands of the Regional Council, which is now a well-established political institution consisting of the political leaders of the region. This ensures that much of the responsibility is concentrated at the local level and that local priorities are the focus of attention. At this point I will underline that a representative nominated by the Indigenous peoples in the region takes part in the work of the Regional Council as a member.

In my view, the Barents cooperation also has a broader European and Arctic dimension. I believe that this kind of regional cooperation between Russia and Western countries is an important means of integrating Russia into the new European architecture. The Barents cooperation also has links with the European Union, both because Sweden and Finland became members as of January 1995 and because the commission itself is a full member of the Barents Council. Thus, both the European Union and Russia meet in the Barents region. As a Norwegian, I must say that Norway, although not a member of the European Union, would welcome an even closer involvement by the EU in the Barents cooperation.

One year ago, the Nordic Council of Ministers put forward to the Nordic Council a report on cooperation in the Arctic region. In this report it is recommended

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that an organizational solution for cooperation in the Arctic region should be found; that coordination at the Nordic level of activities in the Arctic should be strengthened; and that Nordic joint-funding models to increase funding of the various activities in the Arctic region should be developed.

Later the same year, as a follow-up, the Nordic Council of Ministers submitted guidelines for Nordic cooperation in the region. The intentions of these guidelines are, *inter alia*, to form joint initiatives in the various Arctic cooperative bodies and establish one cooperative body for the Arctic region.

Our wishes to strengthen Arctic cooperation should lead us to support fully the Canadian proposal on establishing an Arctic Council based on the Arctic Environmental Protection Strategy. I sincerely hope that the coming ministerial meeting in Inuvik next week will take the necessary steps toward creating such a body.

As I see it, within environmental cooperation we would obviously benefit from a better coordination, clearer focus and priorities, and stronger commitments. I am confident that an Arctic Council could contribute tremendously in this respect.

To illustrate this point, let me only point to the area of Arctic research and the need for closer international cooperation. Today hundreds of research projects have been initiated, and we would surely benefit from better coordination.

The concept of extended security encompasses the relationship between democracy, state and society, social stability, and environmental concerns. I would like to add that these more recent elements play a larger role today than they used to.

My conclusion is that this more complex and multifaceted security challenge requires a much broader set of policy instruments; a further coordination of policies and institutions is required.

In order to obtain these goals, the Arctic states should make an effort to achieve consensus on the establishment of an Arctic Council, thereby giving a clear profile to international Arctic cooperation.

Furthermore, the governments should include in the declaration on the establishment of the Arctic Council a provision concerning the parliamentarians as part of the Arctic cooperation structure. Our Standing Committee could, for instance, be an advisory body within the Arctic Council.

I do hope that the United States will take part not only in governmental but also in parliamentary cooperation. Its participation is necessary if we parliamentarians are to have any fruitful influence on development in the Arctic region.

Finally, governments should initiate a systematic review of international agreements and other commitments to ensure that satisfactory consideration is given to the environment of the Arctic region and that existing provisions are tightened, or that new ones are drafted where applicable.

We must commit ourselves to resolving economic and social differences and problems concerning resources and the environment. It is in our own interest to join forces in an effort to promote environmental protection, the responsible management of resources, and sustainable development, and to prevent conflict and instability. In this work we must strike the right balance between political, economic, and military measures. We must respond to the new challenges facing us, while at the same time safeguarding the traditional security measures that are still applicable.



Nuclear Issues: An Emerging Concern for Environmental Security

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Interagency Commission on
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I would like to speak on radiological security in the Arctic of the Russian Federation. The scope, however,

is such that this should be of concern to Russia's neighbours as well.

The ecological state of the Russian Arctic bears the fruits of the cold war, and the land is greatly contaminated because of nuclear testing in that area. The Arctic Ocean is also contaminated as a result of the dumping of liquid radioactive waste by British, Russian, and French military radiochemical plants, by the Russian navy, and also by merchant marines. Solid radioactive waste from nuclear reactors and spent fuel also presents a potential threat of radioactive contamination to the Kara Sea. This was discovered only recently when a report was published in 1994 by the special commission headed by Academician Yablokov. I was a member of this commission as chairman of the Committee on Ecology of the Russian Parliament at that time. At the present time, because many of the archives have been declassified and scientific expeditions have more access to previously closed areas, much information has been published. Primary sources of data on contamination of the Russian Arctic region have been published.

A global source of contamination of the environment in Russia and its neighbours continues to be the slow process of leaching products of nuclear testing from the atmosphere. There have been eighty-seven atmospheric nuclear tests at the Novaya Zemlya test site. Approximately 8 megacuries of the radionuclide cesium-137 has been emitted into the atmosphere. After the atmospheric tests at the Novaya Zemlya test site in 1961 and 1962, the level of radioactive fallout in the northern regions of the USSR rose from a factor of 200 to 3000 as compared to 1960. After the superbomb—a 58-megatonne bomb—was exploded in September 1967, the density of radioactive fallout in one settlement was recorded at a factor of 11 000 higher than the background. Nuclear weapons testing has contaminated not just this region, where the radioactive level is higher by a factor of three, as compared to Greenland and Alaska, for example, but because of atmospheric transfer, has contaminated northern areas of neighbouring countries as well.

The radionuclide cesium eventually goes through reindeer to humans. In the Far North, reindeer herders

and members of their families are a critical group for radiation doses. About 100 000 people are at risk there, and the dose of radiation for these people is twice as high as the background dose. Radiological medicine has not yet developed criteria for long-term effects and the effects of small, continuous doses of radiation to the human body. Examination of these herders has shown that the levels of cesium-137 are higher by a factor of 10 to 30 as compared to those people who have not been exposed to this kind of radiation, and esophageal cancer in that area is higher by a factor of 10 to 20, as compared to the Russian population as a whole. So I cannot agree with the statement by my colleague who said yesterday that various forms of contaminants in the food or other aspects of Arctic exposure are not a hazard. I think this is an issue that has not been studied sufficiently and that there is definitely a threat there that needs further study.

With regard to the threat of nuclear contamination from military activities, in Russia, the United States, and elsewhere, we are faced with the problem of a great number of nuclear-powered submarines. Before the year 2000, we have to decommission 166 submarines; 95 of them are in the northern fleet. Since 1995, we had 87 decommissioned nuclear submarines in the Russian northern fleet. The maintenance for one such submarine is US\$850 thousand a year. Many of these submarines still have nuclear fuel aboard. The realistic speed of decommissioning is two submarines a year. We understand that this is one of the really difficult problems for us today, and we really are at a dead end. We do not know how to deal with it, both from the financial point of view and from the point of view of how to deal with the nuclear equipment on those submarines. The problem of nuclear buildup was directed toward achieving a nuclear superiority, and the problem of decommissioning of nuclear submarines was delayed for the future.

The operation of atomic power stations is also a problem. Today, in the north of Russia, on the Kola Peninsula, there are a great number of radioactive zones of spent radioactive fuel that need to be reprocessed or put in long-term storage. GAN, the agency that supervises nuclear activity in Russia, claims that it needs 510 special trains for transporting this spent fuel. One such train costs about

US\$1 million. This year, the Ministry of Atomic Energy of Russia is planning to send five such trains, when we need 510 to transport this spent fuel. So this also is a serious problem. I think that at the present time nobody knows what the optimum solution for this problem is.

From an ecological point of view, there are some particularly hazardous areas in the Kola Peninsula. For example, in Severodvinsk, where the population is a quarter of a million people, new nuclear submarines are constructed and existing ones are maintained and repaired. Exactly one year ago, when I was in this city, there were eighteen nuclear submarines that were subject to decommissioning, with thirty-two nuclear reactors that had been decommissioned. There were also, of course, nuclear submarines that needed to be recharged, and up to ten technological operations were taking place. The refuelling of fuel reactors for these nuclear submarines is a very delicate operation and has to be done according to strict rules. Then there are also missile test sites and naval bases. We cannot even assess the kind of nuclear exposure and risk that this region is subject to. Suffice it to say that an accident at any of these nuclear installations could, under adverse conditions, lead to the radiological contamination of a very large territory—the city of Severodvinsk and the surrounding area, including Arkhangelsk. The zones of the greatest risk would also include the area of Murmansk, where there are storage areas for radioactive waste, spent fuel, and equipment used for refuelling reactors and nuclear submarines. Also on this list we should include the bases of the northern fleet, which is stationed near the Kola Peninsula. All the requirements for liquid nuclear fuels have already been filled, yet 2000 to 2500 cubic metres of liquid nuclear waste is produced each year. The same situation exists for solid nuclear waste. There are many plans and projects for building and reconstructing sites for processing these solid wastes, but they have not yet been realized because of financial difficulties. These are only a few of the facts and figures for some of the potential hazards that are concentrated in this relatively small regional area.

In addition to this, one should stress that underground nuclear tests were conducted in the Arctic region from

1965 on. These were for peaceful purposes, so to speak, up to 2 kilotonnes. In the Kola Peninsula, there were twelve such explosions in Yakutia, twelve in Arkhangelsk, and twelve in western Siberia. The consequences of some of these explosions have been the subject of concern for the people who live in those areas and for the authorities in those regions. I was recently a member of a commission that looked into the consequences of two explosions in Yakutia, and we could see that there were quite significant blowouts from these explosions. They were vented, in other words.

Then we have a power station on the Kola Peninsula, where the question is the acute need for modernizing the equipment, which is aging and requires very strict supervision to make sure that no radiation escapes.

Military installations are not just a source of radioactive contamination, but also of chemical pollution. Sometimes we forget about that. At the Plesetsk test site, for example, which is one of the most active test sites on the globe, oxides of oxygen, sulfur, and nitrogen are emitted. Then there are also parts of rockets that still have remnants of fuel that contains artificial chemicals that are very toxic. This fuel finds its way into the soil. You can imagine the weight of these fragments of aluminum alloys. In the northern region, it is assessed at 20 000 tonnes. We have already noted mass deaths of fish in northern lakes from this chemical contamination.

I have been able to tell you about only some of the problems that Russia faces today. The efforts that the Russian Federation is expending in this very complex situation that we are facing now and the solutions we are proposing for achieving environmental safety are very small. Nevertheless, we are moving very slowly in the right direction. In October of last year, the government adopted a government program specifically dedicated to managing radioactive wastes. There is a project to build a storage facility for radioactive waste at Novaya Zemlya. The cost of the entire program is about US\$50 million. Approximately US\$20 million is yet to be spent before this program for storing spent fuel from nuclear submarines is completed. There is also a program worth US\$8 to 11 million for burying

radioactive waste in the Pacific Ocean. We also have a program for storing radioactive waste from plutonium reactors. This large and ambitious program, if implemented, could stabilize the situation as far as environmental safety is concerned.

What proposals should we make? Of course, I share the disappointment already expressed that our very representative forum here does not include representatives from the United States. These issues in achieving environmental safety, especially as far as military activity is concerned, desperately need the cooperation of everybody involved.

I think it would be good to propose that the United States publish its "white book" on the management of radioactive waste, as we have done. I think this would be a good step toward cooperation that we could establish with Norway, in particular, and others in dealing with particularly hazardous solid radioactive waste.

We need a special convention or a special treaty in addition to the London Convention that would prohibit the dumping of radioactive waste from land into the sea. The whole problem for Russia has been that, up until 1992, all this dumping was done from ships that originated from land. There are many plants that produce spent fuels. Without violating the London Convention, they simply dump radioactive waste into the sea. After four or five years, these radioactive wastes will extend to the area of the northern Russian coast and accumulate in a kind of settling pond. The Barents Sea will become a settling pond for these radioactive wastes.

Taking into account all of the proposals that have been expressed for bilateral and multilateral cooperation between Norway and other northern countries, I think in this vein that the parliamentarians can become lobbyists for this kind of movement. We should continue to try to formulate policies on all of these issues that we have been raising at this conference. We need legislative acts and international acts, both in the form of recommendations and in the form of legislation, which would be directed toward creating an interparliamentary action by these countries. This, I think, would be a very useful and a

very important activity that parliamentarians could undertake.

I would like to also give you two papers. One contains the latest data on radioactive contamination in the Kara Sea and the Barents Sea. The other describes the potential risk from radioactive contamination because of the development of three radiochemical plants in Russia, where liquid chemical and radioactive waste is spreading along the course of the Ob and Yenisey rivers.

In closing, I would like to draw your attention to a two-day conference of the G-7, as well as Russia and Ukraine as an observer, on April 17 in Moscow. It will deal exclusively with issues of radiation safety. This is one of those problems that have reached the point that if not solved will find humanity in a very difficult position. We are going to be discussing sustainable development. We will come up with all kinds of initiatives, but we are not going to have a foundation of security and safety. Without such a foundation, we will not be able to economically or in any other way attain the kind of sustainable development that we talk so much about. This forum was initiated by a nongovernmental organization with whose board of directors I am involved. Its purpose will be to make recommendations to heads of state on how to deal with problems of radiation safety.

Comments by Indigenous Peoples

Problems of the Indigenous Minorities of the Russian North Stemming from Industrial Development of the Arctic

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Russian Federation

This presentation deals with the hazards and anxieties of the Indigenous peoples stemming from the industrial development of the Arctic region of Russia.

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The area of the Russian sector of the Arctic is approximately 9 million square kilometres, 6.8 million of which are water. The Arctic is inhabited by eleven Indigenous minorities the Sami, Nentsi, Dolgan, Entsi, Evenki, Khants, Evens, Chukchi, Eskimos, Nganasans, and Yukagir. The total population of the Arctic peoples is approximately one hundred thirty thousand. In addition, in the immediate vicinity of the Arctic Circle, at latitude 60° north, there are another five peoples, namely, the Koryak, Ket, Mansi, Selkups, and Chuvash, numbering in total some twenty-three thousand people. In the administrative regions and districts of the Arctic, the Indigenous peoples constitute 7 to 18 percent of the population. Approximately 75 percent of them live in rural communities.

The distinguishing features of life in the Arctic are very low temperatures, strong winds, snow, and ice. The ancestors of these peoples lived for thousands of years in a harsh region. They were able to survive because they adapted to the local conditions and fed primarily on what nature provided.

The limitless expanses of the Russian North contain over 60 percent of the explored hydrocarbon reserves and over half of the renewable resources in the form of furs and pelts. The Northern territories provide one fifth of the national income of Russia and produce one tenth of its industrial output. The North produces 75 percent of Russia's oil, 92 percent of its gas, 15 percent of its coal, and almost all of its apatite concentrate. The region also accounts for over half of the harvest of fish and marine products. In the autonomous regions of Khanty-Mansiisk and Yamal-Nenets, over 200 million tonnes of oil and 560 billion cubic metres of natural gas are produced daily. The last decade of the twentieth century has been marked by a sharp increase in the role of the Arctic region as a source of Russia's raw materials. The Arctic is becoming the main centre of the oil and gas industry and nonferrous metallurgy.

The Novaya Zemlya archipelago and adjoining expanses of water on the shelves of the Barents and Kara seas are the main focus of the development and exploitation of the Arctic territories. The geological reserves of the gas condensate deposits on the

continental shelf of Novaya Zemlya are estimated to be at least 10 trillion cubic metres.

The prospects of further rapid development of the natural resources of the Arctic are a matter of serious concern for the Indigenous peoples living there. These peoples are intimately linked to their environment. They depend upon wild animals for their existence. The main occupations of the Indigenous peoples in those regions are fishing, sealing, trapping, hunting, and reindeer herding. On land, the main source of food is reindeer; in the coastal areas, waterfowl, freshwater fish, furbearing animals, and marine animals.

You will be aware of the close relationship between the reindeer herders and the reindeer. They are linked by the eternal bonds of life. Since time immemorial, the Northerners have praised the reindeer in song, story, and dance. For the peoples of the Arctic, the reindeer is a friend, a source of food and drink, and a staff to lean upon in their difficult journey through history. Reindeer herding has united the peoples of the North, preserved their unique culture, and helped to ensure continuity from generation to generation.

I should like to emphasize that the Arctic peoples love the traditional ways of using the natural environment and are totally dependent on the presence of wild animals and fish for their culture, spiritual life, and the preservation of their unique civilization.

In the circumpolar context, the Arctic Environmental Protection Strategy recognizes the need for the Indigenous peoples to be involved in the protection of the Arctic environment. Three organizations of Indigenous peoples, including our association, have been accredited as permanent representatives at all Arctic Environmental Protection Strategy meetings. Participation of the Indigenous peoples in the protection of the Arctic environment is in accordance with the provisions of chapter 26 of Agenda 21 of the UN Environment and Development Conference.

What worries do the Indigenous inhabitants have about the development of the natural resources of the Arctic? They stem from unhappy past experience of Northern development. As everyone knows, the

economy of the Russian North has undergone tremendous changes over the last thirty years. It was this period that saw the beginning of the development and exploitation of the large oil and gas deposits on the Yamal Peninsula and in western Siberia, the nickel ores on the Taimyr Peninsula, phosphates and apatites on the Kola Peninsula, and coal and nonferrous metals on the Chukchi Peninsula. From the very first, the development of the North was in sharp conflict with the traditional way of life of the Indigenous population. The extraction of oil, gas, and coal, the felling of forests, and pollution of the rivers and lakes threatened to extinguish all life.

Unfortunately, state policies for the development of the Northern regions lacked what was most important, i.e., provision for a stable, guaranteed level of subsistence for the local peoples, bearing in mind their traditional ways of using the natural environment. Lands which the Indigenous peoples had inhabited since the beginning of time were in essence seized by the companies and organizations developing the hydrocarbon and mineral resources without the consent of the inhabitants and without direct and fair compensation to them. I shall give some typical examples.

The discovery of oil in the Khanty-Mansiisk autonomous *okrug* in western Siberia has so far brought not so much glory and riches as deep wounds and pain to the long-suffering Khants and Mansi peoples of Yugorskaya Zemlya. From time immemorial the people there have treated Mother Nature with deep love and respect, lived in complete harmony with her, kept her sacred, and taken only what they needed in order to live.

The numerous oil and gas fields, towns, and settlements that sprang up within a short space of time had an adverse effect on the vulnerable environment of the North. This is demonstrated quite convincingly by the example of the sandy landscapes in the Novyi Urengoi region of the Khanty-Mansiisk autonomous *okrug*. In summer, the forest-tundra here resembles central Asia in places. In the vicinity of the celebrated Sarnotlor oil field, disruption of the water regime and air pollution have led to an irreversible process of destruction of large tracts of stone pine

forest. The same thing is happening near Surgut and Nefteyugansk in the Oktyabrskii region of the Khanty-Mansiisk autonomous *okrug*. In the Ob River, which is sacred to the Khants people, the spawning grounds of valuable fish species are contracting at a dangerous rate, and the yield of furbearing animals and birds along the river is declining as well.

In both the Khanty-Mansiisk and Yamal-Nenets autonomous *okrugs*, 11 million hectares of reindeer pasture, twenty-eight fishing streams, and 17.7 thousand hectares of fish spawning and feeding grounds have been destroyed. The Khanty-Mansiisk autonomous *okrug*, which in the recent past was unspoiled, has now been declared an ecological disaster area.

On the Taimyr Peninsula, the Norilsk combine is destroying thousands of square kilometres of land used traditionally for reindeer-herding, fishing, and hunting.

An ecological catastrophe has been created in Chukotka. During the last ten years, enormous manmade spoil heaps have sprung up around the settlements of Krasnoarmeisk and Komsomolsk. Dozens of rivers and lakes have been ruined. Streams of residual oil and solar oil from drilling equipment set up near the settlement of Maiskoe drain into the soil and water bodies all year round. The coastlines of the Arctic seas and the tundra are littered with discarded barrels and rusty iron. Most of the settlements in Chukotka are unsanitary.

The Nentsi living in the Nenets autonomous *okrug* on the coast of the White Sea have suffered immense deprivation as a result of nuclear testing at the facility on the Novaya Zemlya archipelago. It is a widely known fact that old reactors have been dumped into the waters adjoining Novaya Zemlya and that ships and containers loaded with radioactive waste have been sunk there. Between 1954 and 1992, 132 underground, 87 atmospheric, and 3 underwater nuclear tests were conducted at the facility. In addition, information from various sources reveals that another four to seven tests were conducted in the Nenets autonomous *okrug* for "peaceful purposes." According to experts, the combined force of these explosions was over 300 megatonnes. Atmospheric

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testing is known to produce fallout containing the long-lived radionuclides cesium-137, strontium-90, and carbon-14, which play an important role in the subsequent internal irradiation of humans resulting from the consumption of food products (meat and fish) contaminated with those radionuclides.

According to information from the Committee on the Effect of Atomic Radiation in the Far North, the dose of internal radiation is thirty-five times higher than the mean statistical level. And this means that the Indigenous population, which eats mainly reindeer meat and fish, receives a dose of cesium-137 that is 100 to 1000 times greater than the mean individual dose received by the rest of the population. As a result, there has been a dramatic decline in the health of the population and an increase in mortality. Thus, among the inhabitants of the Nenets autonomous *okrug* the incidence of cancer of the esophagus has risen by 49.1 percent over the last ten years, and the incidence of lung cancer has tripled. There has been a decline in the birth rate and an increase in infant mortality. The number of people contracting and dying of cancer rose by 46.4 and 75 percent respectively between 1965 and 1991. Those areas situated on the coast of the White Sea have been particularly hard hit by oncological, cardiovascular, and urogenital diseases. During the last thirty years, the number of people suffering from malignant tumours in the Nenets autonomous *okrug* has increased sevenfold (from 2.2 per thousand people in 1961 to 14.3 per thousand in 1991). In the last ten years, there has also been a tendency for the number of birth defects to increase (from 13.9 cases per thousand people in 1969 to 30.7 per thousand in 1989). Birth defects are the main cause of infant mortality. Scientific studies have shown that the effect of technological hazards on the human organism in the Arctic has its own peculiarities. Practically all chemical compounds involved in oxidation-reduction processes (hydrocarbons, fluorine, and organochlorine compounds) have an adverse effect on humans even within the limits of current national maximum permissible concentrations (MPCs). Hence we consider it necessary to develop regional (Arctic) standards for harmful environmental factors, in other words, regional MPCs.

There is also a need to review the current system of social safeguards for the public to allow for compensation for health impairment suffered as the result of the activity of various environmentally harmful industries. Above all, the Indigenous inhabitants fear that they are no longer masters in their own land. And all the Indigenous peoples, be they Khants, Mansi, Chukchi, Dolgan, Evenki, or others, are asking the same questions: "Where can we graze our reindeer? Where can we hunt, trap, and fish? Where can we gather berries and mushrooms? Where can we get soil? Where can we live?"

The workers employed in the oil- and gas-producing companies are exclusively outsiders and unversed in the local traditions and culture. Understandably, then, many social problems have arisen, particularly as the Indigenous inhabitants have received no compensation for the damage they have sustained. Instead, it was suggested that they should abandon their nomadic way of life. There have been many depressing consequences, including degradation of personality, a feeling of having been made irrelevant in the life of their ancestral land.

The first essential task is to restore the legal entitlement of the Indigenous peoples to the historical lands where they live and engage in economic activity, and use this as a starting point for establishing an economic foundation for their existence and development.

As yet there exists in Russia no concept of traditional use of the environment, nor yet of ecological and ethnographic zoning of the North. The geographical distribution of the different nations, cultures, and economies has not been ascertained, and no inventory has been made of the biological and natural resources of the Arctic.

The problem is, how to preserve the genuine culture and values of the Indigenous peoples in conditions of social change in the Arctic? How to provide them with the opportunity to be equal partners in the economy and the life of society? How to protect and conserve nature, the natural environment, and biological reproduction in the Arctic?

Owing to major miscalculations by the state, the "departmental approach" to Northern development prevailed in the 1950s and 1960s, which excluded drawing on the experience and knowledge of the Indigenous population in the rational use of the environment and the conservation and study of nature.

The second urgent question to be addressed is the need for government and state organizations and industrial agencies and enterprises to recognize the value of the traditional experience of the Indigenous peoples, the knowledge built up over centuries in the area of environmental preservation. We welcome conscientious scientific research work which will help everyone to better understand the mysteries of the Arctic. However, the local inhabitants of the Arctic regions naturally want their views to be heard as well, so that their knowledge and experience can be treated with due respect. Having lived here for many centuries, these peoples have assembled a great deal of information about the Arctic ecosystem, about the ice, snow, and ocean currents, about the behaviour of the animals, fish, etc. The representatives of the industrial enterprises and agencies and local self-government bodies are trying to convince us that they know all there is to know about living in the Arctic, and that the traditional knowledge of the Indigenous peoples has little current relevance. Such an attitude is not only offensive but profoundly wrong. The Indigenous peoples have acquired their knowledge of the environment and untamed nature through direct observation over many generations. It also should be borne in mind that traditional knowledge is important to the Indigenous peoples in their everyday lives as well. It helps them to a more comprehensive and complete understanding of the processes associated with the use of the natural resources of the Arctic. We consider it possible to work out proposals for the establishment of a unified data bank containing the traditional knowledge of the Indigenous peoples of the circumpolar regions.

Thirdly, our association takes the position that there should be strict limits on all types of industrial activity with flaws that are making the Arctic environment worse. The government should see to it that the potential hazards posed by such activity are kept within reasonable limits. We consider that the

local Indigenous population should also have a voice in the formulation and adoption of respective measures. This is only right since the local population would suffer most from any mistakes made.

The fourth task is to set up a system for keeping the Indigenous population informed about the state of the environment in which they live and engage in economic activity, particularly when the Arctic environment has been disturbed.

On the whole, we only learn about the actual ecological condition of the regions where the Indigenous peoples live when we attend international nongovernmental conferences, symposia, or meetings. The people on the spot frequently do not know how polluted their environment is.

The fifth problem that needs to be addressed is how to ensure that the Indigenous peoples receive their fair share of the economic benefits flowing from the exploitation of natural resources in areas where they have always lived. At present, state officials in Russia endeavour to keep quiet about the problem and make every effort to avoid solving it. However, the association insists on working out an appropriate system for paying the peoples of the North fair compensation for the damage done by industrial development to the land where they live and engage in economic activity. We are entitled to demand from the state and industrial agencies not only material compensation, but work at the oil and gas fields and opportunities to obtain the necessary training for that work.

We are faced with the task of not only preserving ethnic and cultural uniqueness, but of raising the Indigenous peoples of the North to the level of modern civilization. We therefore consider it desirable to examine the possibility of adopting an international convention on the Indigenous peoples of the Arctic aimed at preserving and restoring their gene pool and their natural and cultural heritage.

The position of our association is clear and principled. We insist that environmental protection in the Arctic be improved while the concept of sustained development is being implemented, and that the

Arctic be regarded as the sphere of habitation of the Indigenous peoples and a biospheric reserve for the development of humankind in the twenty-first century.



Security Issues

Shirley Adamson
Vice-Chief

Yukon Region Assembly of First Nations

In the paper prepared by Dr. Möttölä, the comment is made that "national security interests should not be made at the expense of others." In his paper, Lt. Col. Nokkala identifies the question that always remains as "*whose* and *what* security is finally at stake."

Similar comments have been made and similar questions have been contemplated by Indigenous peoples throughout our relationship with non-Aboriginal people who live among us and alongside us as our neighbours.

For the last half a century, Indigenous peoples in the Yukon Territory have been adversely impacted by and have been struggling to cope with *other* peoples' and *other* countries' security measures. Let me provide you with some examples.

The building of the Alaska Highway during the Second World War had an immediate and profound effect on us. Our people suffered. Women in the communities along the route were used, abused, and rejected. Children of the soldiers were born and abandoned. Our men were demoralized.

Chemical and other contaminations from construction camps, maintenance camps, and dump sites still remain along the entire length of the highway today, over fifty years later.

Indiscriminate slaughter of wildlife by bored soldiers seriously diminished the vital resources of First Nations. The Kluane Game Sanctuary was the resulting creation, and for decades following, put our

people in conflict with non-Aboriginal laws for simply pursuing a traditional livelihood.

What the Alaska Highway did was to open, once and for all, our previous homelands to the outside world. A highway made to help insure the security of another country helped erode the security of our First Nations land base and our jurisdiction.

Airports were built in our wilderness areas to allow aircraft to be ferried into Alaska. By the conclusion of the war, some of those airstrips had never been used. Today they are grown over. The buildings have crumpled. All that remains unchanged, for longer than my lifetime, is PCB contamination.

Army vehicles and other pieces of equipment lay abandoned and scattered throughout First Nations' traditional territories, from the Northwest Territories through to the Yukon along the Canal Road and the oil pipeline.

What were the benefits to Aboriginal peoples? All these years later we are given inadequate funding to locate, document, and clean these sites, called "orphan sites" because no governments or countries will own up to their responsibilities for these damaged environments.

These stories are not unique to Yukon First Nations. All Indigenous people can tell stories very similar to ours.

However, in spite of that shameful historical backdrop, we are still prepared to be invited into forums such as these so that we may be able to speak for ourselves and tell our own stories the way they ought to be told.

You see, we are like all other peoples in that we too desire and strive for security—for ourselves today, our children tomorrow, and always for the environment, which is the very foundation of our Aboriginal lifestyle and livelihood.

Dr. Möttölä, in his paper, suggests that security is no longer an abstract concept. Security is no longer a matter of prestige and power, but something quite

different. He also suggests that security concerns the survival of humankind, the biosphere, the physical environment, and the social environment—virtually all aspects of human life. Dr. Möttölä suggests that "the rule of accountability lies at the heart of modern security." That is so true from our perspective, given the experiences of our immediate past.

Dr. Möttölä points out in his paper that "protection of the identity of Indigenous peoples is a specific item on the Arctic human rights agenda." It is extremely important to be guided by this knowledge. We are distinct societies. We have languages, practices, and beliefs that define our identities. All this is tied so closely to the land, the waters, the environment as a whole, that should the environment be destroyed, so would our identities as people indigenous to the land be destroyed.

Dr. Möttölä recognizes that "Arctic Indigenous peoples form transnational communities that have recently become more active political actors." That is a very accurate observation. It is true that we are forming new relationships to do for ourselves what non-Aboriginal governments cannot or will not do for us. What I ask you to consider is how shall we now form bonds of support between ourselves and yourselves.

Lt. Col. Nokkala suggests in his paper that "the growing complexity of issues due to the rising density and interplay of globalizing and localizing tendencies makes it difficult for governments to meet new challenges." That may be so, but it must be done. If Aboriginal involvement in decision making about the Arctic is a "new challenge," then that challenge must be met. NORAD systems, the North Warning System, and cruise missile testing in airspace over our homelands require us to be properly consulted and involved. New relationships between Aboriginal governments and other governments must be established and maintained.

It is vitally important that we undertake to meet this new challenge of a new relationship because we know absolutely that the environmental effects of military activities and disarmament will be felt first by our people.

We are not convinced that nuclear reactors and warheads lost in the sea are not a serious threat to people or the environment. We are concerned about the management and storage of radioactive waste. We are concerned that military activities such as low-level flight training, construction of radar stations, DEW sites, shooting ranges, explosion areas, and other field exercises will continue without any consideration of us and for us.

Dr. Möttölä comments that "an individual finds security in freedom from threats against his or her basic values, welfare, and integrity." Our basic values as Indigenous peoples differ from your own. Our condition of welfare may differ from yours. Our definition of integrity may differ, but I am sure we can all apply Dr. Möttölä's comment to ourselves and believe that it applies to us alone.

As we consider Dr. Möttölä's definition of security, let us also consider that "national security interests should not be pursued at the expense of others;" that the questions always remain: "*whose* and *what* security is finally at stake."

Statements

Sweden

Marianne Samuelsson

After this discussion, I am more sure than before that our security is more an environmental question than a military question. The Arctic has a regional, but also a global perspective since pollution is transboundary in character. As such, it is affected by pollution from distant sources. We know that pollution in the Arctic has detrimental effects on circumpolar Indigenous peoples and local pollutions.

Development of the Arctic area is of central importance, not only economically and environmentally, but also for stability and our future security. The situation for security and defense in the Arctic is somewhat uncertain and under change. Current

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national, regional, and international instruments may not be quite satisfactory in ensuring the continued protection of the fragile Arctic ecosystem. In adding to that, environmental catastrophes that may threaten the Arctic region are of such a range that they demand immediate international cooperation.

During this century, large portions of the Arctic region have been the scene of extensive military activity, which has resulted in severe pollution, on both the global and local scenes. This pollution now poses a threat to the life and health of those who live in the region to the extent that it may result in restrictive possibilities of continued settlement. It also poses a serious threat to biological diversity and the biological resources in the region.

The lack of nuclear safety is by far the greatest threat to the environment and the people living in the Arctic. In the northern seas there are, up to this date, nuclear-powered submarines and nuclear weapons. In the Barents Sea and Kara Sea, considerable amounts of radioactive waste have been dumped or stored or scrapped. Excess leakage has been detected from nuclear-powered submarines.. This and the fact that part of the northern territories has been used continuously as nuclear testing grounds mean continued great potential environmental threats to the Arctic and to the world. In this context it is also necessary to express our great satisfaction with the openness of Russian research and environmental competence, particularly associated with environmental data.

Another of the most obvious threats is the depletion of the ozone layer. New research shows that this is a more serious problem than previously expected. Means should be provided for arriving at discussions with regard to the London and Copenhagen conventions and the Montreal Protocol. We have also noticed that the climate conventions have not had the effect that they were meant to on the Rio conference. It is a known fact is that the unsustainable lifestyle of the developing countries contributed greatly to transporting contamination. The rich countries must, therefore, clean up at home and develop new sustainable development techniques and lifestyles while, at the same time, supporting the introduction of a new sustainable technology in developing countries.

In this work, we must not forget to create public support for necessary ventures by means of education and information.

To sum up, the international community should acknowledge its responsibility to restrict, in the Arctic region, environmental threats and radioactive and other harmful waste on land and on sea, and also to reduce the pressures from military activity and conventions. We give our support to a multinational pilot project to gain practical experience in monitoring the eventual removal of nuclear waste from Arctic locations. We all have to work very hard to reduce greenhouse gases from our own sectors.



Russia

Vladimir Goman

The whole issue of nuclear radiation safety is of a global nature. The problem is very acute. It is due to the global changes taking place in the world. The processing and storing of radioactive waste is a very expensive way of dealing with the problem, but at the same time we see it as a promising step in the way of international cooperation to prevent pollution in the Arctic. We require the necessary financing by international agencies to deal with this problem. This problem is common to us all, to all countries of the world, especially the Arctic circumpolar countries.

To this end, we have received objective data on the environmental situation in Russia, and I agree with the statement made by Dr. Menshikov with regard to the need to receive a complete and objective volume of information about radioactive waste in other countries.



Iceland

Ásta R. Jóhannesdóttir

Traditionally Icelanders, the inhabitants of the Nordic countries, and people across the world as a whole consider our part of the world to be the least spoiled,

the least damaged, the least polluted. And so far it is true. There are no major sources of pollution in the North.

"No man is an island," the poet wrote some centuries ago. It is equally true that in terms of pollution, no country can be considered an island either because pollution knows no boundaries and does not need transport to travel.

Iceland relies almost entirely on products from the sea as a source of foreign currency. The Nordic countries, in general, have managed to sell their fish products at higher prices than all other competitors because they have been able to advertise their products as being the cleanest in the world. Consumers are making increasingly stronger demands for healthy products, and the international market has, therefore, been willing to pay higher prices for our fish products marketed from the Northern Hemisphere. The global perception of northern fish as the least polluted in the world is, therefore, the cornerstone of our economy, at least in Iceland. So far, this perception of the market is valid, but one wonders if that is going to last forever.

Our economy depends mainly on products from the sea. The threat to our future is, therefore, over fishing. Management of marine resources is of utmost importance. It is also pollution of the sea, the PCBs and POPs contaminants that we spoke of yesterday, and, last but not least, the dumping of nuclear waste and radioactive waste in the sea. It would be catastrophic for us if a nuclear radioactive accident would occur in the ocean in or near our fishing grounds. Even such accidents far away could ruin our economy.

As has been said before, environmental degradation does not honour boundaries. So we must solve these problems globally through international agreements. An Arctic Council would be very important in the task to serve and fight the threats that the circumpolar region faces. It is, therefore, important that the Arctic Council be established as soon as possible.

I want to make Mary Simon's words from this morning mine and say that we can work toward ensuring that the Arctic Council meets the needs of the North and its peoples and becomes uniform in seeking consensus-based solutions for problems and challenges facing the circumpolar region.



Finland Pentti Tiusanen

My point of view in this discussion is a little bit different. The importance of Russian nuclear military waste is local. The question is very difficult and important, but it is local.

The greenhouse effect is the most important environmental problem of this world and has an effect on the security of people on this planet—perhaps most greatly in the Arctic regions in Europe.

The warming of the atmosphere has begun. Scientists agree on the matter, that the atmosphere will be 2.5 to 3.5 degrees Celsius warmer than now in the year 2100. What that means is climatic changes in the polar areas.

Very rapidly we will see changes in the Gulf Stream. If the direction of the Gulf Stream changes, the consequences will be very rapid and strong in the north of Europe, in the Arctic regions of Norway, Sweden, Finland, and Russia. It will have a negative effect on the circumstances of life.

We must send a message to all governments and people of the world that the output of greenhouse gases—carbon dioxide being the biggest one—must be reduced.

It is very sad that the United States of America is not here with us.

Population density is a part of ecological security. It is not ecologically sustainable to increase the

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population in the Arctic regions. It is a threatening scenario. It depends on overpopulation in the south and on changes in environment in countries like Bangladesh, India, and China.



Denmark/Greenland Hans-Pavia Rosing

During the long period of the cold war, the Arctic was heavily utilized for military purposes by air bases and early warning systems. Nuclear-powered submarines were in the Arctic seas and aircraft equipped with nuclear weapons were in the air above us. Being geographically located between East and West, the Arctic regions of the United States, Canada, and Russia, including Greenland, were exposed to a constant threat.

In Denmark and Greenland, there is currently a political and public debate on the Danish policy on US military presence in Greenland from the early 1950s to today. The Danish policy on a nuclear-free Denmark is specifically being questioned because of recent information that the Thule air base in the most northern part of Greenland has been the site of nuclear weapons, and aircraft carrying nuclear weapons are constantly flying over Greenland. Military considerations require the government of Denmark to keep the people ignorant of crucial information.

This meeting here in Yellowknife has shown that the threat from the days of the cold war is being seriously replaced by the threat of what has been broadly called "Arctic contaminants and environmental degradation." We fully agree with the thoughts shared with us by Mr. Syse this morning on an Arctic environment group security regime.

At a meeting with an organization called the Parliamentarians Global Action at the UN headquarters in New York some years ago, I recall a presentation by Sir Brian Urquhart, a veteran in the development of the United Nations. He talked about the peacekeeping and peacemaking troops, or the Blue

Berets, as they are called, and presented an interesting idea to combat the global degradation of the environment. He proposed the formation of "Green Berets" to assist on an international level to save the environment. This is an interesting thought, though the financial and structural problems of the United Nations probably would prevent its realization for quite a period yet.

I would like to stress that we strongly support the overall enthusiasm around the table and thus around the circumpolar region to make environmental security the first priority of our agenda immediately and into the next decade.



Canada John Finlay

Security reflects not only military security but environmental, human (social, cultural, and historical), and economic security and is implicit in our vision for sustainable development. This concept of security is greater than the traditional notion based on political and military aspects as it relates to peaceful relations between states and respect for human rights as well as economic cooperation and ecological solidarity.

We believe that this broader definition including cultural and economic security supports traditional livelihoods and activities such as trapping and hunting.

We support the concept of a broad security framework in the Arctic. National security can only be achieved in an international context. The Arctic Council promises to provide such a context that is effective and efficient and does not duplicate existing programs.

We believe that appropriate attention should be given to the issue of unsustainable population growth. Unsustainable resource utilization, coupled with population growth, can cause stresses which may produce civil conflict and security threats.

The various aspects of the present and emerging situation in military security are those of nuclear and conventional disarmament, arms control, confidence- and security-building measures, and the environmental effects of military activities.

We are concerned about the exposure to radionuclide contamination via marine routes and feel that special attention should be given to terrestrial and freshwater exposure routes and that increased attention should be given to these routes including atmospheric fallout as it has the capacity to contaminate all ecosystems.

We recognize the need for open and cooperative efforts and exchanges of information to combat the environmental security problems facing the circumpolar Arctic and encourage these discussions among all countries. All circumpolar countries will have to contribute their expertise to effectively combat the problem of radionuclide contamination.

To achieve these goals and objectives we recommend the establishment of the Arctic Council without further delay. While ensuring the participation of regional and international stakeholders, among others, all governments concerned by pollution in the Arctic, we recommend that the broader vision and meaning of security be encompassed in its mandate. Once the Arctic Council is established, members should use political affiliations and memberships in other

political and governmental organizations to urge environmental security through pollution prevention measures in these countries.

We strongly support, as part of the cultural survival and security of Aboriginal peoples, traditional subsistence activities, including the harvesting of furs and sea mammals, and strongly urge other governments to join us.

We urge that governments pursue immediate action to safely decommission nuclear vessels (icebreakers and submarines) and their waste products presently in disuse in the Arctic waters. Nuclear decommissioning and waste disposal technology as available in Canada, the United States, and Russia should be applied as a matter of urgency in order to achieve, as soon as possible, the safe disposal of nuclear reactors, similar equipment, and waste presently posing a threat to human and environmental health.

We recommend that circumpolar countries work cooperatively through an open and free exchange of information and ideas; that the Standing Committee of Parliamentarians adopt an encompassing meaning of security in its future programs and actions; and that all governments support and adopt the broad meaning of security not only in the Arctic but all around the world.

Speeches

Introductory Speech

Circumpolar Cooperation toward Sustainable Development: Achievements and Possibilities for the Future

Birgitta Dahl
Speaker of the Swedish Parliament

Circumpolar cooperation. Sustainable development. These are—or should be—central ideas in this part of the world because only by applying them can we meet the present and future needs of the people we represent.

Therefore, our Second Conference of Parliamentarians of the Arctic Region is a meeting of utmost importance. I can think of no more appropriate setting for it than this magnificent Canadian Arctic environment.

May I, on behalf of myself and of the Swedish delegation, express my appreciation and gratitude to the Canadian Parliament and Government for inviting us here and for the arrangements and efforts to make it possible for us to work constructively towards fruitful results of our meeting. Now it is up to ourselves to lay the foundation for circumpolar cooperation towards sustainable development.

What is, then, sustainable development and why is sustainable development so important in the Arctic region? The best definition I know of the concept of sustainable development is that of the Brundtland Commission: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

For my own part, I would like to go one step further. I think it is necessary to call for responsible development, that is, development based on a concept of humanistic and ecological consensus. It is, of course, essentially the same thing as sustainable development, but it underlines our responsibility to consider the possible results of our activities, to think of what impact our economic and social way of life has on conditions of life for whatever living—now and in the future.

The responsible way of planning our development is a matter of justice. It is a matter of finding the equilibrium between satisfying today's needs—not least the needs of those who are less privileged on this planet—on the one hand, and of being fair to the future, on the other. We have no right to interfere with our natural conditions of life so that future generations will have to live in an unclean environment or in deteriorated conditions of life compared to what we inherited from our forefathers.

We must also be fair to the downstreamers, to those who live downstream in both a concrete and an abstract sense. We must not let other people or any living thing become wronged or suffer any shortcomings by our actions.

Furthermore, we must be fair to nature itself. The species of the fauna and the flora have their own inherent rights to undisturbed survival. This delicate balance must be considered not least in connection with infrastructural projects that seem indispensable to economic development and social evolution. In other words, projects that we feel would secure a desired decent way of life for people in the Arctic regions.

These considerations are hopefully part of a new general attitude to life. The change of attitudes was to a large extent brought about by the negotiated commitments of the two world environmental conferences in Stockholm in 1972 and in Rio in 1992.

In the Arctic, though, these problems grow acute. Here we have a region where temperatures are so low and living conditions so relatively difficult that renewable resources are regenerated at a pace that is very slow. Damage done to the flora, for instance, will often be noticeable for decades. The Arctic region is extremely vulnerable. Since, on the other hand, it is one of the world's richest regions in terms of oil, gas, minerals, forests, hydropower potentials, wetlands, fish, etc., the urge to make use of those riches is, of course, great.

Economic activities, which certainly are desirable per se in this region that comprises a land area that is 40 percent larger than that of the European Union, will have to be carried out with very special consideration for the particular conditions that are prevailing here.

Another problem is constituted by the fact that a large portion of hazards to nature and living conditions in the Arctic emanates from regions far away. Air pollution from industries situated many hundreds of miles away may cause more severe damage in the Arctic than in the region of origin. Most of the discharge of gases that are harmful to the ozone layer takes place elsewhere on our planet, but the results are most measurable in the Arctic and Antarctic regions.

Also, the Arctic is an important sensor of environmental changes in general. Studying the Arctic will lead to a better understanding of the climatic and environmental development of the earth. One example of this is the role of the Arctic basin as a prominent heat exchanger and pump in relation to the seven seas.

All these factors lead to the conclusion that international cooperation is necessary concerning research and practical measures in the Arctic region—or, for that matter, in the Antarctic. There, however, international cooperation has already started taking shape.

Many initiatives have already been taken in the field of Arctic cooperation. One of the most important is the so called Rovaniemi Process on the government level, which constitutes the framework of the Arctic Environmental Protection Strategy, the AEPS.

Governments have committed themselves to creating an Arctic Council later this year, and I join you in urging for that to take place in reality.

There are, however, an encouragingly great number of other fora for studying and cooperating in the field of Arctic development. Some of them are governmental or supported by governments, some are entirely nongovernmental.

I am well aware of the fact that, for instance, the Nordic Council has initiated surveys of organizations and institutions involved in Arctic cooperation. I believe that a very important step that could be taken in this area right now is arranging for a new, thorough, and comprehensive investigation of all activities being planned or carried out in relation to the Arctic by various actors.

The reason for my suggestion is not only the obvious one, but a desire to make good use of the resources that are at hand while avoiding duplication of work, on the one hand, and to ensure sufficient coordination, on the other. It is also a wish to utilize the fact that the general political developments of the last five years have been made as open as possible.

Institutions that were more hesitant to divulge the results of their research earlier are prepared to make them available to a broader public. A month ago, the US navy gave the preparatory committee of this conference an extremely interesting rundown of its findings concerning Arctic issues. New scientific research is being published by Russian institutions. A number of specialized institutes in other countries obviously have new and interesting data to share.

What I would like to propose, therefore, is actually that an inventory of relevant Arctic work be carried out on our behalf and as a preparation for our next conference. This would mean that we would get comprehensive knowledge of what is going on, what can be set in motion, and what is still missing and has thus to be initiated. On this basis we can contribute to making the right priorities for future work. We may also indicate our views as to a proper distribution of work among different institutions and organizations.

When it comes to designing policies in different fields in the Arctic region, it is obvious that the Indigenous population must be given the right to play its proper role. This is a matter of political and democratic fairness—that is, securing the participation and involvement of all parties and balancing decisions that are often made hundreds or even thousands of miles south of the area that is directly affected by them. It is also a matter of efficiency. It must be downright stupid not to listen to people who are building their entire existence on knowledge of nature. Human beings who speak languages that have more than twenty words for snow must be able to make valuable contributions to decisions that are intended to secure sustainable—or responsible—development in their homeland.

All this has to be regarded as one aspect of the comprehensive policies that states are already carrying out vis-à-vis the Indigenous populations as well as other groups with special needs in the social, educational, and economic fields. My point is that here, as in all other fields in the Arctic region, it is the comprehensive way of approaching problems—based on empathy and profound understanding for people's needs—which can lead to sustainable development.

It is also important to involve all other parties that in reality do affect the Arctic, for instance by emissions of air pollutants, or can contribute to a more sound development. I am thinking of interested parties like the European Union and some of its member states which are not Arctic states proper. They have indicated their interest to play a more active role in Arctic cooperation with regard to both the environmental situation and the administration of resources for sustainable development and economic development. As a parliamentarian in a country that has recently acceded to the European Union, I do appreciate the possibility to make use of the financial resources of the European Union for the purpose of developing cooperation in the Arctic. It is essential that we reply constructively to this expression of interest in Arctic cooperation by the European Union and its member states. These parties can certainly play a useful role in the Arctic.

So far I have dealt with Arctic cooperation in more general terms. Let me in conclusion focus on why we are here today.

The basic idea of creating a kind of cooperation on Arctic issues, that in itself is sustainable, is to involve and commit responsible and interested politicians. We should continue the series of parliamentary Arctic meetings that was started in Reykjavík, Iceland, in 1993 and continues here in Yellowknife, Canada, today. We have taken a certain responsibility upon our shoulders, and we have to answer to that. It is essential that parliamentarians from all eight Arctic states participate. I share your concern and disappointment that we do not have our colleagues from the United States with us here today. No individual country can shun its responsibility. Otherwise, our cooperation will not lead to constructive results.

Adding a full-fledged parliamentary dimension to Arctic work will secure a many-faceted discussion, which might inspire bold measures in Arctic cooperation. It will lay a truly democratic foundation for future decisions. Initiatives may be taken in national parliaments as a result of deliberations at our conferences. The understanding of Arctic issues will grow. National parliaments might be induced to pull in the same direction and seek common solutions to problems relevant to the Arctic region. The road will be paved for national ratification of international agreements on a government level.

Against this background, I think that the main message from this conference to the Arctic ministerial meeting in Inuvik, Canada, next week should be: "We welcome the creation of an Arctic Council. We urge that it will be formally constituted as soon as possible. We assume that it will contain provisions for a parliamentary dimension."

If this goal can be achieved, I am convinced that a structure has been created that can work reasonably effectively towards the delicate balance between economic development and social evolution, on the one hand, and consideration for a rich but vulnerable Arctic nature, on the other. That will be circumpolar cooperation towards sustainable—and responsible—development.

Keynote Speech

Ethel Blondin-Andrew
Secretary of State for Training and Youth
(Canada)

Let me begin by extending a warm welcome to the many international delegates to this Second Conference of Parliamentarians of the Arctic Region. I am very proud you have selected my riding to play host to this prestigious gathering. I hope you will find time in your busy schedules to explore our community and sample some local hospitality. I hope your time in Yellowknife will be as enjoyable as it is educational.

There is certainly much we can learn from each other as we develop strategies to respond to pressing environmental concerns confronting Northern nations. Based on the discussions I heard this morning, I have every confidence we will make substantial progress in advancing the agenda established during the first meeting of Arctic parliamentarians in Reykjavík in 1993.

In May 1975, Richard Nerysoo, a member of the Gwich'in First Nation who went on to serve as government leader for Canada's Northwest Territories said that

being an Indian means being able to understand and live with this world in a very special way. It means living with the land—with the land, with the animals, the birds and the fish, as though they were your sisters and brothers. It means saying that the land is an old friend that your father knew, that your grandfather knew.

And, I might add, that our children and grandchildren will also know.

That is the issue we are grappling with at this meeting. Each of us is determined to preserve the traditions and lifestyles of the First Peoples. At the same time, we are adjusting to the realities of the

information age. All of this, while coping with the pressures imposed by dramatic demographic shifts and political change in our nations. Though we represent different counties—with distinct histories, languages, and cultures—as Arctic parliamentarians, we are bound by a common responsibility to find answers to these complex questions.

I would like to focus my remarks today on Canada's response to this dilemma. I want to outline the many opportunities—and challenges—facing Canada's North, and explain how environmental considerations fit within that broader context.

First, I want to talk about the Canadian Arctic's potential, starting with our capacity to contribute to sustainable development. Like all Northern peoples, Arctic Canadians have lived for centuries in peaceful coexistence with some of the harshest conditions on the planet. One of the legendary elders of this nation, the late Chief Dan George, once observed: "My people's memory reaches into the beginning of all things."

Our ancestors recognized that not only was it impossible to tame the elements, it was inappropriate. Generations of Aboriginal people grew up understanding that there is a balance in nature which must be respected if we want to leave a legacy to our children.

In my culture, we consider our children to be our greatest assets—the key to the North's and Canada's future. If we can harness their energy by equipping them with an advanced education, young Arctic Canadians will make important contributions to the North's social and economic development, while ensuring its environmental integrity.

Our human resources—our young people—are the North's most important resource. Workplace projections show that within a decade, Canada will experience a severe worker shortage, which the swelling ranks of young Northerners could capably fill. Government studies show that a reduction of the Aboriginal employment rate to the national average by the year 2000 would increase the gross national product of our country by 2.3 percent!

Perhaps our greatest strength in the North is our consensus-style approach to governing. We recognize there is strength in diversity. We willingly accommodate the different perspectives and languages of the people from various regions of the North. The Northwest Territories Legislative Assembly is the only place on earth where eight official languages are part of the daily discourse.

But there is much more to the equation than just social and political considerations. With 40 percent of Canada's land mass and more than half its coastal waterways, the North presents exceptional economic opportunities.

The raw beauty of this largely unspoiled region provides the backdrop for a thriving eco-tourism industry. It also harbours some of the richest mineral deposits and energy reserves on the face of the earth. The Northern territories are home to an abundant base of metals, diamonds, gold, oil, and gas. Almost unlimited wealth could be unleashed through their development.

Studies conducted for the Government of the Northwest Territories suggest that the development of two to ten new mines over the next twenty years could produce from \$13 to \$42 billion and create anywhere from five thousand to twenty thousand permanent jobs.

Add to that our oil and gas reserves in the Fort Liard region, for example, and Mackenzie valley lands. Natural gas and oil producers are beating a path to our door, and with good reason. A recent issue of *Fortune* magazine predicted that by the year 2010, global oil demand will soar from today's 70 million barrels per day to 95 million barrels. Oil analysts anticipate a huge jump in the price of oil and increased industry willingness to develop oil reserves such as those in northern Canada.

Then there is our hydroelectric capacity. The Dog Rib Regional Council has begun a \$34 million hydro project on the Snare River that will supply cleaner, cheaper power to Yellowknife. It may be the first of several to supply electricity throughout the North, which will encourage regional economic development.

As Aboriginal people regain title to large stretches of territory through land claim settlements—and become owners in mining, oil and gas, hydroelectric, and forestry development—opportunities will open up for further job creation in Canada's Arctic.

The establishment of Nunavut—a third Northern territory in the eastern Arctic—is a case in point. According to estimates released by the Nunavut Implementation Commission, some six hundred positions will be created when the new territorial government is operational. Aside from those permanent jobs, there will be spin-off employment in the construction of new office buildings, community infrastructure, and expansion of the housing market. The infusion of new money and new energy will provide needed jobs and stimulate economic growth for residents of the eastern Arctic.

Now, let me juxtapose that potential with our current reality. Canada's Arctic is also home to some of the most complex socioeconomic—not to mention environmental—challenges of any region in our country. People living here have high living costs, unequal access to goods and services, fewer employment opportunities, and lower standards of living. Government expenditures, rather than earned income, account for the bulk of many families' incomes.

Not by choice, the North is a "have not" region—dependent on huge federal transfers, cost-of-living subsidies, and social assistance support—and host to all the social ills such conditions spawn. Whether we focus on literacy levels, school dropout rates, housing conditions, or health indicators, the situation in our communities is alarming. The North claims the worst-case statistics in any category.

Unemployment, as just one example, has deteriorated from a rate of 4.2 percent in 1971 to 17 percent in 1994. In communities where the population is predominantly Aboriginal, the actual rate often exceeds 30 percent!

Compounding our current problems is a potential population time bomb. Almost 33 percent of our

population is fifteen or under. We have one of the highest birth rates in the developed world. Women in the Northwest Territories between the ages of fifteen and nineteen have three times more children than women the same age in Canada as a whole. Without change, the North's social and economic problems will only worsen in the years to come.

Most distressing to me, we have kids all across the Arctic addicted to solvents, drugs, and alcohol—committing suicide at a rate four times the national average—because they believe there is no hope for their future. What sort of future will we have if there is no hope?

It is unacceptable that Arctic residents account for the most disturbing statistics in this country, particularly, given the North's human resource potential, our wealth of nonrenewable resources, our magnificent physical environment that could spawn a vibrant eco-tourism industry, and our ability as Aboriginal people to coexist in harmony with nature by heeding the lessons of the elders and respecting Aboriginal ways.

The discrepancy between where we might be and where we are is the dilemma I face as an Arctic parliamentarian. I suspect the scenario I just described is not foreign to many of you. As Northern people we face the common challenge of trying to strike the right balance in determining where and when development should occur and how it should proceed.

No doubt we all want a North that preserves the traditional lifestyle of our peoples and respects the delicate nature of our fragile ecosystem. Yet we also want a North that allows our people the dignity of earning a decent living.

In Canada, we are convinced the development of our resources and our tourism potential must proceed if we are to fulfill that promise. The key, however, is to ensure we develop the Arctic in a way that will benefit Northern people, today and for generations to come. Let there be no doubt. Canada places a premium on environmental protection. We are not advocating growth at any price. Development must occur in a way

that is culturally sensitive, environmentally sound, and socially responsible.

And that is where Northern people themselves can make a crucial contribution. Canadians recognize the wealth of Aboriginal knowledge about environmental sustainability. The Aboriginal peoples have long been respected for their role as protectors of the land. Traditionally—and to this day—the First Peoples have lived by hunting, gathering, and fishing. Our environmental stewardship has permitted us to not just survive, but has allowed our cultures to flourish for centuries. Our history of successful coexistence with the elements has stood the tests of time.

Sadly, however, modern society has altered the environment and threatened the traditional way of life in many of our communities. Scientists now know that far from being the pristine frontier many imagine the Arctic to be, we have contaminants from industrialized regions in the south entering the Northern food chain. We can often see for ourselves the pulp effluence in our rivers and streams. All such environmental threats represent serious hazards to the health of humans and wildlife throughout the region.

That is why we must be vigilant, learning from the mistakes of the recent past and building on Aboriginal wisdom that has been passed down through the generations. If and when development does proceed, it must be done right. We must be absolutely convinced that the land and its resources will be managed in a way that respects the environment, leaves plenty of room for traditional pursuits, and maximizes Northerners' ability to become more self-reliant.

All Arctic parliamentarians have a duty to see that goal is achieved, because the many challenges I have outlined today extend beyond our national borders. We must work collectively to raise awareness—within our respective governments and in the larger global community—that Northern issues have repercussions for people the world over. Whether it wants to address climate change, economic development, maintaining traditional ways and traditional knowledge, or developing the workforce for the next decades, the world community must shift its focus north.

I think we need to develop a common Northern vision that clearly outlines our social, economic, and environmental goals and the strategies to achieve them.

Domestic and international laws and policies should be put through a Northern litmus test—much as we already do in Canada in policy development, taking into consideration the diverse interests of various regions of this country. In this way, we could ensure proposed legislation is realistic and workable, and will help meet the North's socioeconomic and sustainable development objectives.

I believe that vision can be achieved. My people's history convinces me that we can design the kind of Arctic and the kind of future we want for ourselves and our children.

Through centuries of living on the land, Canada's Arctic peoples have proven it is possible to live in harmony with nature. We demonstrate daily, through our consensus-style government and our ability to communicate in eight different official languages, that we can live in harmony with each other. We are a model of unity for our own nation and an example of what is possible in all Arctic countries when we work together to achieve mutual goals.

As a Canadian Arctic parliamentarian, I am committed to working with those of you from other corners of the Northern Hemisphere to ensure we do find lasting solutions to the many social, economic, and environmental problems faced by all Northern peoples.

Critical challenges confront us. Yet our capacity to overcome them has never been better. We have the motivation. The many experts assembled here prove we have the necessary talents. And, as this conference makes clear, we have the momentum.

Symposiums such as this make the world a whole lot smaller, and bring the solutions that much closer. It is now up to each of us to take the next necessary steps to turn this meeting's recommendations into reality. By cooperating—sharing our passion for the protection of our resources and the preservation of our traditional lifestyles—we can build a better

framework for Arctic development. United, we can effectively raise awareness throughout the hemispheres that the environmentally sound and sustainable development of the world's Arctic territories will benefit the global community, forging a better future for Northern peoples and bringing greater prosperity to us all.

Closing Address

Mari Kiviniemi
Vice President
Nordic Council

It is a great pleasure for me to have the opportunity on behalf of the Nordic Council to make some concluding remarks. First of all, I want to say that this conference has met all our expectations for a lively debate and good information. We have covered some of the most topical issues concerning Arctic cooperation at the present time.

The first theme of this conference was Achieving Sustainable Development in the Arctic Region. In the speeches and comments it became clear that in the Arctic marine and land areas we find the last remaining large and contiguous tracts of untouched nature on the north European, Asiatic, and North American continents. The Arctic plays a key role in the global climatic and environmental system through effects on the atmosphere and circulation in large parts of the North Atlantic and the Pacific. The Arctic marine areas are among the largest in biological production in the world, and the land and marine areas there also have extensive mineral resources and deposits of hydrocarbons.

We participants in this conference share the opinion that the Arctic states bear a special responsibility for ensuring that these unique natural assets are used in a sustainable way in the future. There is a continued need for protection of the environment and preservation of biological diversity in the Arctic region. All this has to be done by means of sustainable development.

The comments made by Indigenous peoples yesterday and also today reminded us of the fact that their way of life has traditionally been sustainable. Taking care of the land, water, and wildlife has always been central to their culture. The Indigenous peoples' way of life provides a good basis when defining the concept of sustainable Arctic development today. But the most difficult thing is not to define the concept of sustainable Arctic development. The major challenge for the Arctic community is to start up the developments and activities needed for supporting sustainable Arctic development on a practical level. Despite the difficulties in turning the concept into an operational paradigm, Mr. Pauli Jumppanen managed in his presentation yesterday to make a very distinctive list of concrete actions.

The second theme of the conference was Environmental Contaminants in the Arctic. In the background paper and in the presentations, the vulnerability and sensitivity of Arctic nature were clearly pointed out. The Arctic ecosystem has been subjected to increasing inputs of environmental contaminants. We know that current national, regional, and international legal instruments are generally not adequate to ensure the continued protection of the fragile Arctic ecosystem, including its peoples, from environmental contaminants. There are very many challenges for us parliamentarians. Cooperation in legislation is needed.

The concrete results of this conference we have achieved with the third theme: Challenges for Arctic Governance. This conference has, above all, been a manifestation of the will of the parliamentarians to strengthen Arctic cooperation through the establishment of the Arctic Council. We know the work has not been moving forward as decisively as we would have liked. As participants in this conference we now have the responsibility to take up this issue in our respective national parliaments and to put real political pressure on the negotiations. It is also very important that we show how useful our work is and use the channels we have to get a positive commitment and participation by the United States.

When the new organization is established, we parliamentarians should continue our work to broaden

support for Arctic cooperation and to ensure the new organization is competent and able to carry out its work. The next parliamentary conference will give us an opportunity to evaluate how the work has progressed. We are very glad to accept the generous invitation by Russia to host the next conference.

Ms. Birgitta Dahl proposed yesterday in her speech that an inventory of relevant Arctic work be carried out on our behalf as a preparation for our next conference. The idea is very much to be supported. We do have to make good use of the resources at hand while avoiding duplication of work and also ensure sufficient coordination. The Nordic Council has already produced material concerning these issues. So that provides a good basis for the new evaluation.

The fourth theme of the conference was security. As mentioned in the background paper prepared by Dr. Kari Möttölä and Lt. Col. Arto Nokkala, Arctic regional security is not only connected with problems arising from the East–West legacy, but rather issues that have a North–South character, in particular in the economic and ecological fields, as well as in the area of minority rights. There are significant regional aspects in Arctic security, but it should be viewed in the context of wider change in the international order.

In the Arctic region, the main item on the military agenda remains strategic nuclear stability and arms control between Russia and the United States. The end of the cold war has made it possible to proceed in this area faster than expected before; many steps have been taken in both nuclear and conventional disarmament.

In conclusion, I want to take this opportunity, on behalf of all participants, to thank the House of Commons of Canada and Mr. Clifford Lincoln for the considerable effort that you have taken to ensure the success of this conference. I also want to express our thanks to the Ministry of Environment of Canada and to Director Ann Marie Sahagian and her staff for all the excellent arrangements in connection with this conference. Thank you and thanks also to the Legislative Assembly of the Northwest Territories.

Conference Program

Tuesday, March 12, 1996

Reception — Prince of Wales, Northern Heritage Centre

Welcome to the Northern Heritage Centre

*James Antoine
Minister of Aboriginal Affairs
Government of the Northwest Territories
CANADA*

Wednesday, March 13, 1996

Introduction and Welcome — Legislative Assembly Chamber

Opening Remarks

*Clifford Lincoln
Chairperson of the Conference
CANADA*

Welcome to the Legislative Assembly of the
Northwest Territories

*Samuel Gargan
Speaker of the Assembly
Legislative Assembly of the Northwest Territories
CANADA*

Circumpolar Cooperation toward Sustainable
Development: Achievements and Possibilities for the Future

*Birgitta Dahl
Speaker of the Swedish Parliament
SWEDEN*

Theme I: Achieving Sustainable Development in the Arctic Region

Background Paper

Toward Sustainable Development in the Circumpolar North

*Terry Fenge
Executive Director
Canadian Arctic Resources Committee*

Presentations

Comanagement Regimes: An Approach to
Sustainable Development of Natural Resources

*Duane Smith
Vice-Chair
Inuvialuit Game Council
CANADA*

Issues and Challenges for the Sustainable Development
of Natural Resources in the Arctic: A Nordic Perspective

*Pauli Jumppanen
Managing Director
Finnish Barents Group Oy
FINLAND*

Conference Program

Comments by Indigenous Peoples:

Achieving Sustainable Development in the Arctic Region

Rosemarie Kuptana
President
Inuit Circumpolar Conference
CANADA

Sustainable Development in the Gwich'in Settlement Area

Fred E. Koe
Advisor
Gwich'in Tribal Council
CANADA

Statements and General Discussion

Theme II: Environmental Contaminants in the Arctic

Background Paper:

Environmental Contaminants in the Arctic

Hajo Versteeg
Environmental Law and Policy Advisor

Presentations

Arctic Contaminants: A Canadian and Circumpolar Perspective

Garth Bangay
Regional Director General
Atlantic Region, Environment Canada
CANADA

POPs—Global Commitment and Regional Actions in the Arctic

David Egilson
Director
Office of Marine Environmental Protection
Food and Environmental Agency of Iceland
ICELAND

Communicating with Communities

Bill Erasmus
Dene National Chief
CANADA

Comments by Indigenous Peoples:

Environmental Contaminants in the Arctic

Gary Bohnet
President
Métis Nation of the Northwest Territories
CANADA

Statements and General Discussion

Reception and Banquet – Explorer Hotel

Keynote Speaker

Ethel Blondin-Andrew
Secretary of State for Training and Youth
CANADA

Cultural Presentation

Rae Drum Dancers

Thursday, March 14, 1996

Theme III: Challenges for Arctic Governance

Background Paper:

Arctic Governance: Meeting Challenges of Cooperation in the High Latitudes

Oran R. Young

Director

Institute of Arctic Studies

Dartmouth College, United States

Presentations:

Challenges for Arctic Governance

Geir Haarde

Chairman

Standing Committee of Parliamentarians of the Arctic Region

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The Arctic Council: Status, Challenges, Next Steps

Mary May Simon

Ambassador for Circumpolar Affairs

CANADA

Comments by Indigenous Peoples:

Address on behalf of the Sami Parliaments
in Finland, Norway, and Sweden

Sigrid Stångberg

Member of the Sami Parliament in Sweden

SWEDEN

Statements and General Discussion

Theme IV: Security Issues

Background Papers:

Political and Military Aspects of Security in the Arctic

I. Political Principles of Security and the Arctic Region

Kari Möttölä

Special Advisor, Security Policy

Ministry for Foreign Affairs, Finland

II. Security in the Arctic Region: Military Aspects in an
Integrative Framework

Arto Nokkala

Visiting Research Fellow

Tampere Peace Research Institute

University of Tampere, Finland

Presentations:

Collective Environmental Security

Jan P. Syse

President of the Lagting

NORWAY

Nuclear Issues: An Emerging Concern for Environmental
Security

Valery F. Menshikov

Staff Consultant

Russian Federation National Security Council

Interagency Commission on Ecological Security

RUSSIA

Conference Program

Comments by Indigenous Peoples:

Problems of the Indigenous Minorities of the Russian North
Stemming from Industrial Development of the Arctic

Valery Shustov
General Secretary
Association of Indigenous Minorities of the North,
Siberia, and the Far East of the Russian Federation
RUSSIA

Security Issues

Shirley Adamson
Vice-Chief
Yukon Region, Assembly of First Nations
CANADA

Statements and General Discussion

Discussion and Adoption of the Conference Statement

Conference Conclusion and Closing Remarks

Closing Address

Mari Kiviniemi
Vice President
Nordic Council
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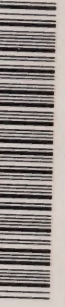
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